Air Quality in Ontario 1989

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AIR QUALITY IN ONTARIO
1989

A review of the Ministry of the Environment
air quality monitoring program for 1989

TABLE OF CONTENTS

EXECUTIVE SUMMARY 3

INTRODUCTION 4

GLOSSARY 5

ABBREVIATIONS 5

SECTION A - MONITORING NETWORK OPERATIONS
1. Quality Assurance and Quality Control 6

SECTION B - POLLUTANTS MEASURED BY CONTINUOUS MONITORS (HOURLY DATA)
2. Sulphur Dioxide (SO_2) 7
3. Suspended Particles (SP) 7
4. Total Reduced Sulphur Compounds (TRS) 8
5. Carbon Monoxide (CO) 8
6. Hydrocarbons (THC/RHC) 9
7. Nitrogen Dioxide (NO_2) 9
8. Nitric Oxide (NO) 10
9. Total Nitrogen Oxides (NO_x) 10
10. Ozone (O_3) 10

SECTION C - THE ONTARIO AIR QUALITY INDICIES
11. Air Quality Index (AQI) 15
12. Air Pollution Index (API) 20

SECTION D - POLLUTANTS MEASURED BY HIGH VOLUME SAMPLER (DAILY DATA)
13. Total Suspended Particulates (TSP) 24
14. Lead (Pb) 24
15. Trace Metals (Cadmium, Chromium, Iron, Manganese, Nickel, Vanadium) 25
16. Nitrate (NO^-_3) 26
17. Sulphate (SO^{2-}_4) 26

SECTION E - METEOROLOGY AND AIR QUALITY
18. Summary of Meteorological Conditions (1989) 30
19. Discussion of Ozone and SP Episodes 30

TABLES
1. Highlights of the Continuous Monitoring Network (1989) 12
2. Air Quality Index Pollutants and Their Impact 16
3. Air Quality Index Summary (1989) 17
4. Ten-Year History of the Air Pollution Index (1980 - 1989) 20
5. Highlights of the Particulate Monitoring Network (1989) 27

FIGURES

1. 10-Year Trend in "Continuous" Pollutants SO_2, SP, CO and TRS 13
2. 10-Year Trend in "Continuous" Pollutants THC, NO_2, NO and O_3 14
3. Percent Frequency of Unacceptable Air Quality According to Pollutant Responsible at AQI Sites Across Ontario (1989) 18
4. Number of Hours of Unacceptable Air Quality at AQI Sites Across Ontario (1989) 19
5. 10-Year Trend in "Daily" Particulate Pollutants TSP, Pb, and Fe 28
6. 10-Year Trend in "Daily" Particulate Pollutants NO^-_3 and SO^{2-}_4 29
7. Percent Frequency Wind Direction at Selected Sites Across Ontario 31
8. 10-Year Trend in Ozone Across Ontario 32

EXECUTIVE SUMMARY

In 1989, the routine air monitoring program in Ontario included the measurement of nine gases at up to 75 locations, the measurement of particulates at 152 locations and the measurement of meteorological parameters at 32 sites across Ontario.

For gases, undesirable air quality occurred on many occasions. The provincial air quality criterion (AQC) most frequently exceeded was that for ozone (O_3) and was largely associated with medium- and long-range transport of pollution from the United States. All 47 stations which monitor ozone, recorded exceedances of the criterion at least once during the year. The 24-hour criterion for suspended particles[1] (SP) was the second most frequently exceeded AQC. Out of 43 SP stations, 31 measured exceedances of the criterion at least once during 1989. Exceedances for sulphur dioxide (SO_2) and total reduced sulphur (TRS) occurred at some stations as well. There were two exceedances of the 1-hour nitrogen dioxide (NO_2), criterion during 1989. The ten-year trends indicate improvement for sulphur dioxide, carbon monoxide (CO) and total reduced sulphur, but little change in suspended particles, hydrocarbons (HC) and oxides of nitrogen (NO), (NO_2), and (NO_x). Although the number of exceedances of the 1-hour criterion for ozone was fewer than in 1988, the mean annual ozone levels remained high in 1989.

For "daily" particulates undesirable levels were reached on several occasions. The 24-hour criterion for total suspended particulate (TSP) was frequently exceeded. Out of 152 stations, 110 measured at least one exceedance during the year. Over the year, the average level of total suspended particulate was undesirable at thirty-seven of these stations (24%) which exceeded the annual AQC. Six of the 84 stations for which lead was analysed, measured exceedances of the criterion, while three out of 57 stations measured exceedances for nickel and two out of 54 stations recorded exceedances for manganese. The ten-year trends show improvement in total suspended particulate and lead.

Iron has shown an increase in the past three years while sulphate and nitrate have remained relatively constant over the 10-year period.

The Air Quality Index (AQI) system completed its first full year of measurements. Results showed that although for standard pollutants "good" to "very good" air quality levels prevailed most frequently at all AQI sites across the province (97% of the time or better), undesirable levels of "moderate" pollution did occur about 3% of the time. There were no incidences of "very poor" air quality reported at any location. Elevated levels of ozone and suspended particles are by far the most frequent cause of high index readings at the majority of AQI sites in Ontario. SO_2 was largely responsible for elevated AQI in Sudbury and TRS was the pollutant primarily responsible for high indices in Cornwall and Fort Frances.

The Air Pollution Index (API), which is still the basis of the alert system for air pollution control in Ontario, had at least one exceedance of the advisory level of 32 at eleven sites across Ontario. The API reached a maximum value of 38 at two locations in Toronto. One occurred on October 26 in York (36030) and the other on December 27 at North York West (34025). The alert was called for the API > 31 a total of 13 times during 1989.

Meteorological conditions such as wind speed and direction, atmospheric stability, quasi-stationary high pressure systems, and high air temperatures are shown to play a major role in the occurrence of high air concentrations of various pollutants. In some cases episodes with high levels of ozone or suspended particles found at several monitoring locations can be related to meteorological conditions.

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1. Particles with a diameter less than 44 microns are considered to behave as a gas since they are small enough to stay suspended for long periods of time. In our usage, the instrumentation which measures suspended particles (SP) restricts the size to particles less than about 10 microns. This is also the size range of most concern from a human health perspective.

INTRODUCTION

In the early 1950's, monitoring for sulphur dioxide began in the Sudbury area. In 1968, the province took over the responsibility for air pollution monitoring and by 1969, 76 sampling sites were operating throughout Ontario. In 1989 gaseous measurements were made at over 100 locations and particulates at 152 sites. It should also be noted that the Acidic Precipitation in Ontario Study (APIOS)[2] monitors wet and dry deposition of acidic and trace metal species at non-urban sites throughout Ontario.

This report describes the 1989 Ontario air quality monitoring program including a summary of the measurements of gases and particulate matter as well as a summary of meteorological conditions during the year. It is intended for use in conjunction with an Appendix which appears in a separate volume.

The ambient air quality data collected from the Ontario Ministry of the Environment monitoring network has been subjected to stringent quality control and quality assurance programs. The purpose of these programs is to ensure that the air quality data collected by the Ministry have attained acceptable levels of accuracy, precision and completeness. Section A of this report gives a brief discussion of the quality assurance and quality control procedures as well as a description of the data base.

This report discusses the following: characteristics, effects, Ontario criteria (if any), sources, method of monitoring, locations (and frequency) of sampling, summary of sampling results, and ten-year trends for each pollutant.

Also, tables are presented which provide the location of stations and the sample distribution information which includes means, maxima, percentiles and the number of exceedances of the Ontario criteria.

The entire continuous (hourly) network is summarized in Appendix Table A-1 and Maps 1 and 2. This table gives station name, numerical identifier, and an indication of the "continuous" pollutants measured. Letter codes indicate whether data were telemetered or chart-read.

The "continuous" pollutants include SP (suspended particles) as well as the following gases:

SO_2	(sulphur dioxide)
CO	(carbon monoxide)
O_3	(ozone)
NO_2	(nitrogen dioxide)
NO	(nitric oxide)
NOx	(oxides of nitrogen)
THC	(total hydrocarbons)
RHC	(reactive hydrocarbons)
CH_4	(methane)
TRS	(total reduced sulphur)

Section B of this report describes each of the "continuous" pollutants in sequence. Section C deals with the new Air Quality Index system which has completed its first full year of operation as well as the ten year history of the Air Pollution Index.

The particulate (daily) network is summarized in Appendix Table A-3 and Maps 4 and 5. This table provides station name, numerical identifier, and the various "daily" pollutants measured. Also, numerals indicate the monitoring cycle frequency in days. Some additional codes are defined in the key at the top of the table. The main particulate pollutants measured are:

TSP	(total suspended particulate)
Cd	(cadmium)
Cr	(chromium)
Fe	(iron)
Mn	(manganese)
Ni	(nickel)
Pb	(lead)
V	(vanadium)
NO_3^-	(nitrate)
SO_4^{2-}	(sulphate)

Section D describes each of the "daily" or particulate pollutants under the headings of TSP, Lead, Trace Metals, Nitrate and Sulphate. These data are collected at a frequency of once every 1, 3, or 6 days.

The meteorological network is described in Appendix Table A-5 and Maps 6 and 7. The table provides station name, numerical identifier, the various meteorological parameters measured as well as the height above ground at which the measurements were taken.

Section E summarizes the general meteorological conditions for 1989 and presents a brief discussion of episodes with moderate or poor air quality due to ozone and suspended particles.

Queries relating to this report or requests for data (magnetic tape or hard copy) should be addressed to:

Quality Assurance,
Telemetry and Analysis Unit
Air Resources Branch
125 Resources Road
Rexdale, Ontario
M9W 5L1
Telephone (416) 235-5780
or (416) 235-5778.

2.Contact for APIOS is Dr. N. Reid, Supervisor, Special Studies/Research Management, Air Resources Branch, 4th Floor, 880 Bay Street, Toronto, Ontario, M5S 1Z8, Tel. (416) 326-1691.

GLOSSARY

COH - the co-efficient of haze measurement yields an estimate of the amount of particulate matter by measuring the amount of light scattering.

Criterion - a desirable maximum ambient air exposure (based on effects).

Detection limit - the minimum air concentration of a pollutant that can be determined by a clearly specified analytical method.

Geometric mean - calculated by taking the nth root of the product of all (n) values in a data set.
- provides a better indication than arithmetic mean of the central tendency for a small data set with extreme values.

Percentile value - the percentage of the data set that lies below the stated value
- for example, if the 70 percentile value is 0.10 ppm, then 70% of the data are below 0.10 ppm.

Primary pollutant - a pollutant which is directly emitted to the atmosphere.

Secondary pollutant - a pollutant which is formed from other pollutants present in the atmosphere.

"Continuous" pollutant - a pollutant for which a continuous record exists; effectively, pollutants which have hourly average data (maximum 8760 values per year).

"Daily" pollutant - a pollutant for which there exists only a 24 hour or daily value (maximum 365 values per year).

ABBREVIATIONS

AQC - air quality criterion.

COH - coefficient of haze.

ppb - parts (of pollutant) per billion (parts of air).

ppm - parts (of pollutant) per million (parts of air).

$\mu g/m^3$ - micrograms (of pollutant) per cubic metre (of air).

SECTION A MONITORING NETWORK OPERATIONS

1.0 Quality Assurance and Quality Control

The Air Resources Branch maintains a reference standards laboratory with gas standards that are referenced to the U.S. National Bureau of Standards as well as to the Pollution Measurement Division of Environment Canada. Quarterly performance audits on the monitoring equipment and the data acquisition system in the MOE network are carried out in order to achieve maximum data accuracy. A ± 10 percent deviation from the audit standard is the criterion for performance acceptability.

The ambient air quality monitoring network is subjected to continuous maintenance and quality control programs. The real-time continuous and particulate air quality data are constantly reviewed, assessed and validated by regional staff and staff of the Air Resources Branch. Remedial actions are taken immediately to rectify any problems that may affect the validity of the data.

In 1989, the Provincial continuous air monitoring instruments were subjected to 834 performance audits. Seventy-five percent of the audits were found to be within the acceptable performance criterion of ± 10%. For the remaining 25% which fell outside the 10% criterion, station log records and backup charts were consulted in order to correct data where possible. As a result, the MOE monitoring network for 1989 had 95.4% valid data.

The particulate air monitoring instruments were subjected to 144 performance audits in 1989. Eighty-five percent of the audited instruments were within the ± 10% acceptable criterion.

1.1 Data Base

The ambient air quality data used in this report were obtained from MOE's Air Quality Information System (AQUIS). Approximately 4 million air pollution measurements are added to AQUIS on an annual basis, the vast majority of which represent the more heavily populated urban areas of Ontario.

Two statistical tests, namely, the pattern test and the gap test are used as a final data screening procedure to identify data anomalies. The pattern test checks for unusual pollutant behaviour. A set of limits for each pollutant has been defined from historical data. Values that are outside these limits are flagged for further investigation. The gap test identifies possible data anomalies by examining the length of the distance between the two largest values, the second and the third largest values, and similarly for other gaps.

The AQUIS data are divided into two major groupings: daily 24-hour measurements and continuous 1-hour measurements. The daily measurements are obtained from instruments that provide one measurement per 24-hour period and are typically operated on a 1,3 or 6 day sampling schedule. Such instruments are used to measure total suspended particulate, lead, various trace metals, sulphate and nitrate. For daily data, a valid annual mean requires at least two thirds of the total number of possible samples, i.e., a station operating on a 6-day sampling schedule would require at least 41 out of a possible 61 samples.

The 1-hour data are obtained from ambient air monitoring instruments that operate continuously, producing a measurement every hour for a possible total of 8760 hourly measurements in a year. A valid annual mean requires at least 5840 hourly readings (i.e., 67% valid readings).

In order for a monitoring site to have been included in the 10-year trend analysis, the site had to have air quality data for at least 8 out of the 10 years 1980-1989.

SECTION B
POLLUTANTS MEASURED BY CONTINUOUS MONITORS (HOURLY DATA)

SO_2

SULPHUR DIOXIDE

2.1 Characteristics
Colourless gas. Strong, pungent odour over 0.5 ppm.

2.2 Effects
1 hour average

less than .16 ppm	-	no known effects
0.16 ppm	-	injurious to sensitive species of vegetation in combination with ozone.
0.26 ppm	-	injurious to sensitive vegetation.
0.34 ppm	-	odourous, increasing vegetation damage.
2.00 ppm	-	increasing sensitivity of asthmatics and bronchitics.

2.3 Ontario Criteria
0.25 ppm (1-hour)
0.10 ppm (24-hours)
0.02 ppm (1-year)

2.4 Sources
80 percent of the SO_2 emitted in Ontario originates from non-ferrous smelters and electric utilities.

A major fraction of the remaining 20 percent comes from other industrial sources including iron ore smelters, petroleum refineries, pulp and paper mills and area sources including vehicles and residential, commercial and industrial heating.

2.5 Method of Monitoring
Fluorescent excitation of SO_2 by pulsed ultra-violet radiation.

2.6 Locations of Monitoring
The Appendix provides a description of the provincial SO_2 network (Table A-1).

SO_2 monitoring was carried out at 75 locations in 1989.

2.7 Monitoring Results
The distribution by percentile of the hourly data, the mean, and the maximum one-hour and 24-hour values are provided in the Appendix (Table A-6). Also given are the number of exceedances of the sulphur dioxide criteria (see Section 2.3).

The lowest annual average levels measured in the province were at one of the two monitoring stations in Thunder Bay where the hourly SO_2 never exceeded .02 ppm.

The greatest number of exceedances of the one-hour and 24-hour criteria occurred at Copper Cliff (77218) in Northeastern Ontario near the Inco Smelter operations. The highest annual mean (.020 ppm) was measured at Thorold (27052) in West-Central Ontario near an abrasives manufacturer and at Copper Cliff. There were a total of 18 stations which exceeded the hourly criterion at least once and seven which exceeded the 24-hour criterion. There were no stations which exceeded the annual criterion during 1989. (See Table 1).

2.8 Ten-Year Trend
The trend in mean annual SO_2 at locations which possess a ten-year record is shown in Table A-7 and is summarized for the province in Figure 1.

Mean ambient SO_2 levels improved by about 38% over the ten-year period. This is primarily due to tighter industrial emission controls and reduced sulphur content in fuels.

SP

SUSPENDED PARTICLES

3.1 Characteristics
A relative measure of suspended particulate matter of size most likely to reach the lungs (diameter less than 5-10 microns).
Determined by the amount of soiling caused by air flow on a filter medium.

3.2 Effects
1 hour average
less than 2.0 COH units - no known effects
2.0 COH units - decrease in visibility
4.0 COH units - soiling evident
6.0 COH units - increasing sensitivity of asthmatics and bronchitics

3.3 Ontario Criteria
1.0 COH unit (24-hours)
0.5 COH unit (1-year)

3.4 Sources
Industrial processes which include combustion, incineration, construction, mining, metal smelting, processing and grinding. Also motor vehicle exhaust and road dust.

Natural sources include wind-blown soil, forest fires, ocean spray, volcanic activity.

3.5 Method of Monitoring
Continuous paper tape sampler with sampling inlet and flow rate regulated to favour small particles.

SP is determined by drawing a known volume of air through a portion of tape and then measuring the reduction in the light transmitted relative to a clean section of tape.

3.6 Locations of Monitoring
The Appendix provides a description of the provincial SP network (Table A-1).

Suspended particles were measured at 43 locations in 1989.

3.7 Monitoring Results
The distribution by percentile of the hourly data, the mean, the maximum one-hour and 24-hour values, and the number of exceedances of the SP criteria (see Section 3.3) are provided in the Appendix (Table A-8).

The lowest levels measured in the province were at Cornwall (56051) where the SP averaged 0.11 COH units.

The greatest number of exceedances (53) of the 24-hour criterion and the highest annual mean (0.72 COH units) occurred at the Mission site (381 Yonge Street) in Toronto. The highest measured value (4.9 COH units) was at the Evans Avenue site (35033) in Etobicoke and in the City of York (36030).

There were a total of 31 stations which exceeded the 24-hour criterion at least once and three which exceeded the one-year criterion (See Table 1).

3.8 Ten-Year Trend
The trend in mean annual SP at selected Ontario cities is shown in Table A-9 and is summarized for the province in Figure 1.

Fine particulate, as determined by SP, has remained relatively constant over the past ten years. (See Section 19 for a further discussion on SP).

TRS

TOTAL REDUCED SULPHUR

4.1 Characteristics
Primarily hydrogen sulphide (rotten egg odour). Also methyl mercaptans (rotten cabbage odour over 5 ppb).

4.2 Effects
1 hour average

less than 5 ppb	- no known effects
5 ppb	- odour threshold
27 ppb	- extremely odourous
1,000 ppb	- sensitive individuals may suffer nausea and headache due to severe odour

4.3 Ontario Criteria

Methyl Mercaptans	- 10 ppb (1-hour)
Hydrogen Sulphide	- 20 ppb (1-hour)
TRS (from Kraft Pulp Mills)	- 27 ppb (1-hour)

4.4 Sources
Industrial - steel industry, pulp and paper mills, refineries.
Natural - swamps, bogs, marshes.

4.5 Method of Monitoring
Reduced sulphur compounds are oxidized to SO_2 and the SO_2 concentration is measured using fluorescent excitation by ultra-violet radiation.

4.6 Locations of Monitoring
The Appendix provides a description of the provincial TRS compounds network (Table A-1).

TRS monitoring was carried out at 32 locations in 1989.

4.7 Monitoring Results
The distribution by percentile of the hourly data, the mean, and the one-hour and 24-hour maxima are provided in the Appendix (Table A-10).

The lowest average levels measured in the province were at Thunder Bay (63200). The highest annual mean (5.0 ppb) and the greatest value measured (359 ppb) were recorded at Cornwall (56068) near a kraft paper mill. The greatest number of exceedances of the 1-hour TRS criterion occurred at Thorold (27052) near an abrasives manufacturer. (See Table 1).

4.8 Ten-Year Trend
Table A-11 shows the trend in mean annual TRS for selected Ontario cities while Figure 1 shows the provincial trend, with a minimum in 1985 and no change over the past two years.

CO

CARBON MONOXIDE

5.1 Characteristics
Colourless, odourless, tasteless gas which is produced as a result of incomplete combustion of carbonaceous fuels. It is of concern as an air pollutant because it has a strong affinity for haemoglobin and thus reduces the ability of blood to transport oxygen.

5.2 Effects
1 hour average

less than 30 ppm	- no known effects
30 ppm	- increased cardiovascular symptoms for smokers with heart disease
50 ppm	- increasing cardiovascular symptoms for non-smokers with heart disease. Some visual impairment.

5.3 Ontario Criteria
30 ppm (1-hour)
13 ppm (8-hours)

5.4 Sources
Primary source (about 80%) is motor vehicles. A secondary source is fossil fuel combustion for building, heating and commercial/industrial operations.

5.5 Method of Monitoring
Non-dispersive infrared photometry based on the preferential absorption of infrared radiation by CO.

5.6 Locations of Monitoring
The Appendix provides a description of the provincial CO network (Table A-1).

CO was monitored at 28 stations in 1989.

5.7 Monitoring Results
The distribution by percentile of the hourly data, the mean, and the maximum one-hour and eight-hour values are given in the Appendix (Table A-12).

The lowest levels measured in the province were at Sarnia (14064) while the highest mean was at the Mission site (381 Yonge Street) in Toronto. The highest measured one-hour and eight-hour values were also at the Mission site. This monitor is located in the Yonge Street corridor exposing it to motor vehicle exhaust.

There were no exceedances of the Ontario one-hour (30 ppm) or eight-hour (13 ppm) criteria during 1989. (See Table 1).

5.8 Ten-Year Trend
There was a 27% decline in ambient CO levels from 1980 to 1983 and, for the past 6 years CO levels have remained constant. (See Figure 1 and Table A-13). This is due primarily to tighter controls on automotive emissions.

THC/ RHC

HYDROCARBONS

6.1 Characteristics
Primarily methane (colourless, odourless) which is present at about 1.5 ppm in the ambient atmosphere. Non-methane hydrocarbons (or reactive hydrocarbons) are usually present at much lower levels. This fraction reacts with nitrogen oxides in the presence of sunlight to form ozone.

6.2 Effects
No known direct effects on health or vegetation at ambient levels.

6.3 Ontario Criteria
None. However, criteria and standards exist for specific hydrocarbons and other organics.

6.4 Sources
Natural sources include trees and other vegetation and decay of animal and plant material.

Anthropogenic sources include motor vehicles, gasoline storage tanks, petroleum and chemical industries, landfill sites, paint manufacture, application and fermentation.

6.5 Method of Monitoring
Calibrated flame ionization detector.

6.6 Locations of Monitoring
The Appendix provides a description of the provincial THC/RHC network (Table A-1).

RHC was monitored at two stations while THC was monitored at 9 locations in 1989.

6.7 Monitoring Results
The distribution by percentile of the hourly data; the mean; and the maximum one-hour and 24-hour values are given in the Appendix (Tables A-14 and A-15).

The locations and values for the lowest, and highest means are given in Table 1. The highest one-hour maximum concentration of reactive hydrocarbon compounds was measured at the University Avenue monitor in Windsor (12008) while the highest 1-hour total hydrocarbon value for the year was measured at the Centennial Park site (35003) in Etobicoke.

6.8 Ten Year Trend
The trend in the annual average of THC at the 6 stations which have a ten-year record is shown in Table A-15 and is summarized for the province in Figure 2. THC levels have remained relatively constant over the ten-year period.

NO_2

NITROGEN DIOXIDE

7.1 Characteristics
Reddish-brown gas with a pungent and irritating odour over .10 ppm. Oxidation product of nitric oxide (NO) which is the primary NOx emission. Reacts with hydrocarbons in sunlight to form ozone; and with water to form nitric acid, a component of acid rain.

7.2 Effects
1 hour average

less than .10 ppm	-	no known effects
0.10 ppm	-	odour threshold
0.25 ppm	-	some increase in bronchial reactivity in asthmatics
0.52 ppm	-	increasing sensitivity of asthmatics and bronchitics

7.3 Ontario Criteria
0.20 ppm (1-hour)
0.10 ppm (24-hours)

7.4 Sources
Anthropogenic - high temperature combustion processes including automobiles, power plants, incinerators and several chemical processes. In Ontario, motorized transportation accounts for about 60% of total NOx emissions.

Natural - lightning, soil bacteria.

7.5 Method of Monitoring
Based on the principle of chemiluminescence involving a gas phase reaction of NO with ozone. For NO_2, the sample stream is passed through a catalytic converter where NO_2 is reduced to NO.

7.6 Locations of Monitoring
The Appendix provides a description of the provincial NO_2 network (Table A-1).

NO_2 monitoring was carried out at 37 locations in 1989.

7.7 Monitoring Results
The distribution by percentile of the hourly data, the mean, and the maximum one-hour and 24-hour values are provided in the Appendix (Table A-17). Also given are the number of exceedances of the nitrogen dioxide criteria (see Section 7.3).

The lowest levels measured in the province were at Dorset where the arithmetic annual mean was .002 ppm.

The highest annual mean (.037 ppm) and the highest 1-hour average (.22 ppm) were measured in Toronto at the Mission site (31049).

There were two exceedances of the 1-hour (.20 ppm) criterion during 1989. One occurred in Kitchener (26029) and the other at the Mission monitor in Toronto. There were no exceedances of the 24-hour criterion. (See also Table 1).

7.8 Ten-Year Trend
The ten-year trend in the annual average of NO_2 at selected Ontario cities as shown in Table A-18, and Figure 2 is relatively constant.

NO
NITRIC OXIDE

8.1 Characteristics
Colourless gas. Oxidizes to NO_2 in the presence of hydrocarbons and sunlight.

8.2 Effects
No known direct effects on health or vegetation at ambient levels.

8.3 Ontario Criteria
None

8.4 Sources
Same as for NO_2.

8.5 Method of Monitoring
Same as for NO_2.

8.6 Locations of Monitoring
Same as for NO_2.

8.7 Monitoring Results
Long Point (22901) on the north shore of Lake Erie had the lowest annual mean and Toronto (31049) the highest. (See Appendix Table A-19 for the data summaries.)

8.8 Ten Year Trend
Figure 2 and Table A-20 show little change in NO over the past ten years.

NO_x
TOTAL NITROGEN OXIDES

NO_x is assumed to be the sum of NO_2 and NO concentrations in the atmosphere (in parts per million). (See Appendix Table A-21 for the data summaries.)

O_3
OZONE

10.1 Characteristics
Colourless gas. Major component of photochemical oxidant compounds formed as the result of chemical reactions between nitrogen oxides and reactive hydrocarbons in the presence of sunlight.

10.2 Effects
1 hour average

less than 50 ppb	- no known effects
80 ppb	- injurious to many species of vegetation
120 ppb	- decreasing performance by athletes exercising heavily
200 ppb	- decrease in lung function in exercising subjects, eye irritation

10.3 Ontario Criteria
80 ppb (1-hour)

10.4 Sources

Ozone is produced by photochemical reactions and is not directly emitted into the atmosphere in significant amounts. Since it is formed downwind of nitrogen oxide and hydrocarbon sources and capable of travelling long distances through the atmosphere, ozone is a manifestation of the long range transport of air pollution and a component of smog. Its formation and transport are dependent on meteorological factors. Warm temperatures are critical and elevated concentrations generally occur from May to September between noon and early evening. While the naturally occurring ozone in the stratosphere is beneficial to life by shielding the earth from harmful ultra-violet radiation given off by the sun, high concentrations of ozone at ground level are a major health and environmental concern.

10.5 Method of Monitoring

Chemiluminescence emission spectroscopy and U.V. absorbtion photometry.

In the first method, an air sample reacts with ethylene to emit visible light (chemiluminescence) of intensity directly proportional to the ozone concentration. In the second method, ozone absorbtion of U.V. light changes the intensity of the U.V. light beam, which is attenuated in proportion to the concentration of the ozone.

10.6 Locations of Monitoring

The Appendix provides a description of the provincial O_3 network (Table A-1).

Ozone monitoring was carried out at 47 locations in 1989.

10.7 Monitoring Results

The distribution by percentile of the hourly data, the mean, and the maximum one-hour and 24-hour values are provided in the Appendix (Table A-22). Also given are the number of exceedances of the ozone criterion (see Section 10.3).

The lowest levels measured in the province were at the Science Centre (34002) in North York where the annual mean was 12.4 ppb.

The highest annual mean concentration (35.7 ppb) was measured at Long Point Provincial Park (22901) while the maximum 1-hour averaged concentration occurred at Junction Triangle (31120) in Toronto. All 47 ozone stations exceeded the 1-hour criterion at least once. The greatest number of exceedances (265) occurred at the CN Tower (31190) where the height of the monitor is 444 metres. Concentrations aloft are higher than those at ground level and during the night they are decoupled from the ground by the nocturnal inversion. (See Table 1).

10.8 Ten-Year Trend

Table A-23 provides the ten-year trend for average O_3 at the stations where a ten-year record exists. Figure 2 summarizes the data for the province. The provincial mean has remained relatively constant with the exception of 1988 and 1989 during which long range transport of pollutants in conjunction with unusual meteorological conditions produced a provincial mean of 24.0 ppb and 23.4 ppb respectively. (See Section 19 for a further discussion on ozone).

TABLE 1 - HIGHLIGHTS OF THE CONTINUOUS MONITORING NETWORK 1989

	SO_2	SP	TRS	CO	THC	NO_2	NO	O_3
LOWEST MEAN LOCATION CONCENTRATION	THUNDER BAY (63200) O ppm	CORNWALL (56051) 0.11 COH UNITS	THUNDER BAY (63200) 0.2 ppb	SARNIA (14064) 0.3 ppm	TORONTO (31120) 1.87 ppm	DORSET (49010) .002 ppm	LONG POINT (22901) .001 ppm	NORTH YORK (34002) 12.4 ppb
HIGHEST MEAN LOCATION CONCENTRATION	COPPER CLIFF (77218) THOROLD (27052) .020 ppm	TORONTO (31049) 0.72 COH UNITS	CORNWALL (56068) 5.0 ppb	TORONTO (31049) 2.4 ppm	ETOBICOKE (35003) 2.27 ppm	TORONTO (31049) .037 ppm	TORONTO (31049) .075 ppm	LONG POINT (22901) 35.7 ppb
MOST CRITERION EXCEEDANCES-1HR LOCATION NUMBER	COPPER CLIFF (77218) 143	N/A	THOROLD (27052) 462*	- 0	N/A	KITCHENER (26029) TORONTO (31049) 1	N/A	TORONTO (31190) 265
MOST CRITERION EXCEEDANCES - 24 HR LOCATION NUMBER	COPPER CLIFF (77218) 14	TORONTO (31049) 53	N/A	N/A	N/A	- 0	N/A	N/A
NO. OF STATIONS EXCEEDING 1 HR AQC NUMBER	18	N/A	20	0	N/A	2	N/A	47
NO. OF STATIONS EXCEEDING 24 HR AQC NUMBER	7	31	N/A	N/A	N/A	0	N/A	N/A
HIGHEST MEASURED VALUE - 1HR LOCATION CONCENTRATION	SUDBURY (77201) 1.34 ppm	ETOBICOKE (35033) YORK (36030) 4.9 COH UNITS	CORNWALL (56068) 359 ppb	TORONTO (31049) 18 ppm	ETOBICOKE (35003) 11.6 ppm	TORONTO (31049) .22 ppm	KITCHENER (26029) .91 ppm	TORONTO (31120) 161 ppb
TOTAL NUMBER OF STATIONS NUMBER	75	43	32	28	9	37	37	47

* Exceedances of pulp mill criterion of 27 ppb for 1-hour.

Figure 1

10-Year Trend in Continuous Pollutants SO_2,SP,CO and TRS

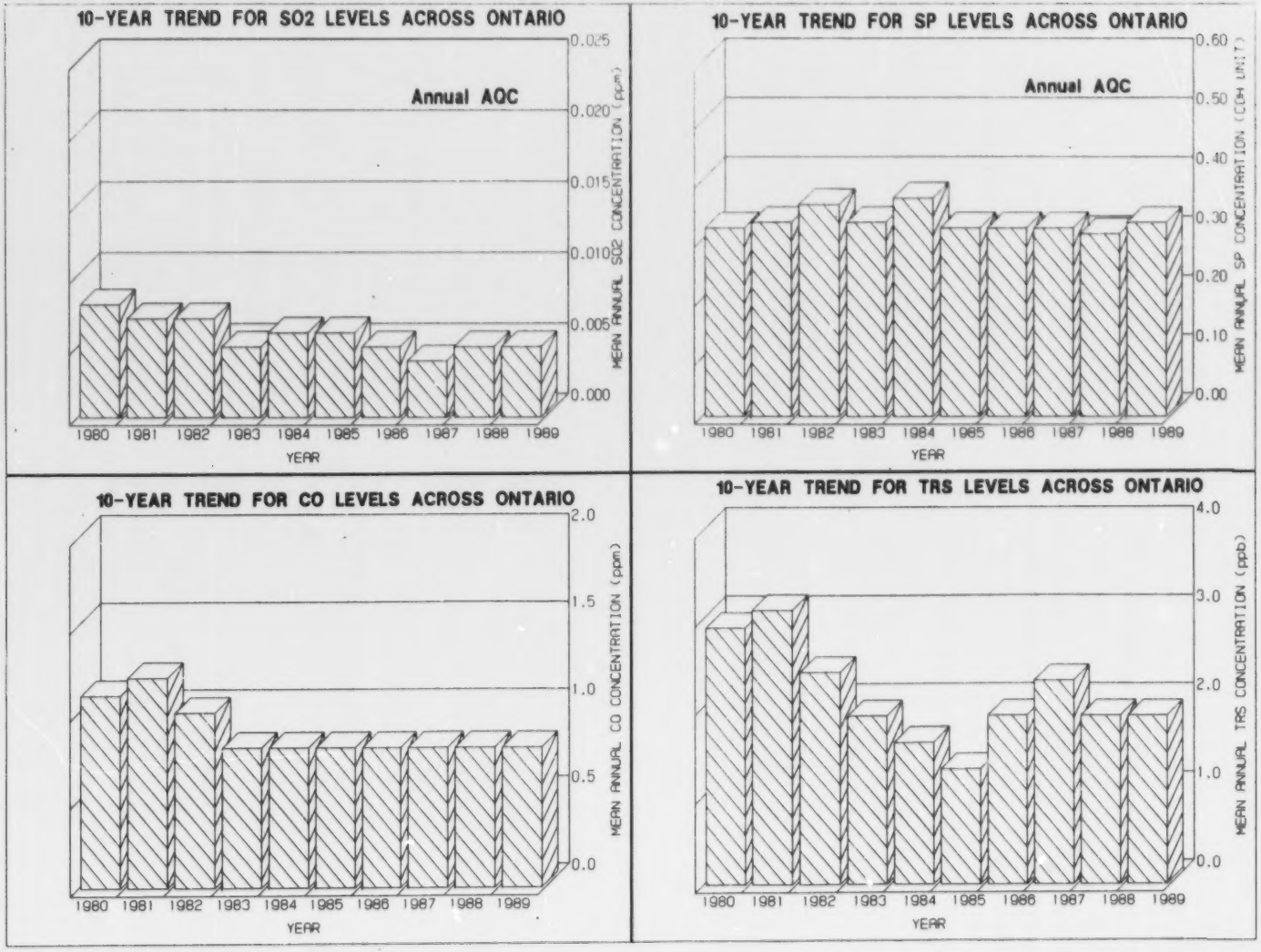
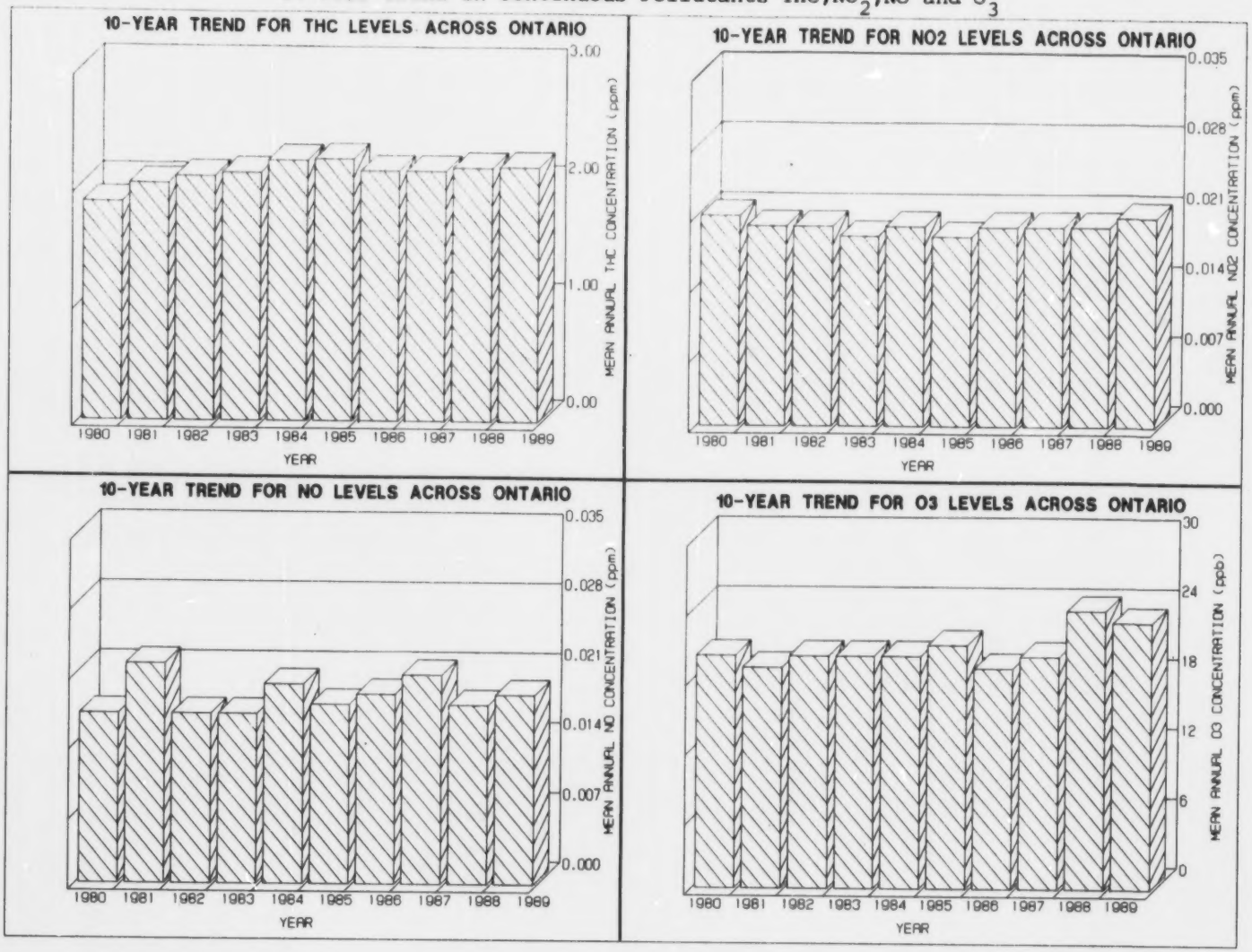


Figure 2

10-Year Trend in Continuous Pollutants THC, NO_2, NO and O_3



SECTION C
AIR QUALITY INDEX

11.1 Characteristics

The Air Quality Index (AQI) is a real-time information system that provides the public with an indication of air quality at 34 sites in 27 major cities across Ontario. The system has been in operation since June 1988. The AQI is derived from the sub-indices which are calculated for the pollutants that have evidence of adverse effects on the environment. These pollutants are sulphur dioxide, ozone, nitrogen dioxide, total reduced sulphur, carbon monoxide and suspended particles. In addition, the API (Section 12.0) is also included as one of the AQI sub-indices along with the eight-hour average of CO. The AQI is provided to the public eight times daily and it is increased to hourly releases when the index reaches 32, the level at which air quality is deemed moderate.

11.2 Effect

The AQI sub-index is calculated on a hourly basis for each pollutant. The sub-index increases as the air quality deteriorates. The index values, the corresponding categories and the health and environmental effects are given in Table 2. The highest sub-index at the given time becomes the AQI.

If the index value reaches 50 - 99, the air quality may have adverse effect on the most sensitive segment of the human or animal population, or may cause significant damage to vegetation, property, or aesthetic value. An AQI value of 100 or greater may cause adverse effect to the health of a large sector of the exposed population.

11.3 Operation of the System

There are 34 AQI monitoring sites in Ontario. The larger cities have more than one AQI station (See Map 3 in Appendix). The cities are selected according to population and previous air quality history. The data from the 34 AQI stations are accessed on a real-time basis by the computer center at the Air Resources Branch. The computed AQI's are released to the public, and the news media 8 times daily. In addition, AQI forecasts based on the meteorological conditions are issued four times daily. In the event that one of the AQI stations has an index greater than 31, the AQI information will be released hourly until it drops below 32.

11.4 Air Quality Index Levels (1989)

The frequency distribution of the hourly AQI according to descriptive category, and according to the pollutant responsible for AQI > 31 is shown for the thirty-four monitoring locations across Ontario in Table 3 . Figure 3 shows the percent frequency of unacceptable air quality (AQI > 31) according to the pollutant responsible while Figure 4 shows the number of hours of unacceptable air quality at AQI sites during 1989. In general, good to very good air quality levels prevailed at all sites throughout the province (97% of the time or better). Carbon monoxide was not responsible for unacceptable air quality levels at any AQI site during 1989. Nitrogen dioxide was in the unacceptable category for 1-hour at Kitchener. From Table 3 it is also evident that ozone and suspended particles were the most frequent cause of high index readings at the majority of the AQI sites. SO_2 was the most frequent cause of elevated AQI in Sudbury while total reduced sulphur compounds were the most frequent cause of high air quality indices in Cornwall and Fort Frances. There were no occurrences of very poor air quality reported at any location.

TABLE 2 - AIR QUALITY INDEX POLLUTANTS AND THEIR IMPACT

INDEX	CATEGORY	CARBON MONOXIDE CO	NITROGEN DIOXIDE NO_2	OZONE O_3	SULPHUR DIOXIDE SO_2	SUSPENDED PARTICLES SP TRS	SO_2 + SP (AS MEASURED BY THE API)	TOTAL REDUCED SULPHUR
100-over	Very poor	Increasing cardiovas-cular symptoms in non smokers with heart disease some visual impairment	Increasing sensitivity of patients with asthma and bronchitis	Light exercise produces respiratory effects in patients with chronic pulmonary disease	Increasing sensitivity in patients with asthma and bronchitis	Increasing sensitivity in patients with asthma and bronchitis	Significant respiratory effects in patients with asthma and bronchitis	Sensitive individuals may suffer nausea and headaches due to severe odour
50-99	Poor	Increased cardiovas-cular symptoms in smokers with heart disease	Odour and discolora-tion. Some increase in bronchial reactivity in asthmatics	Decreasing performance by athletes exercising heavily	Odourous increasing vegetation damage	Visibility decreased soiling evident	Increased symptoms in patients with chronic respiratory disease	Extremely odourous
32-49	Moderate	Blood chemistry but no detectable impairment	Odourous	Injurious to many vegetation species eg. white beans tomatoes etc.	Injurious to some species of vegetation	Some decrease in visibility	Injurious to vegetation due to sulphur dioxide	Odourous
16-31	Good	No effects	Slight odour	Injurious to some vegetation species in combination with SO_2 (4 hrs)	Injurious to some vegetation species in combination with ozone (4 hrs)	No effects	No effects	Slight odour
0-15	Very good	No effects	No effects	No effects	No effects	No effects	No effects	No effects

TABLE 3 - AIR QUALITY INDEX SUMMARY (1989)

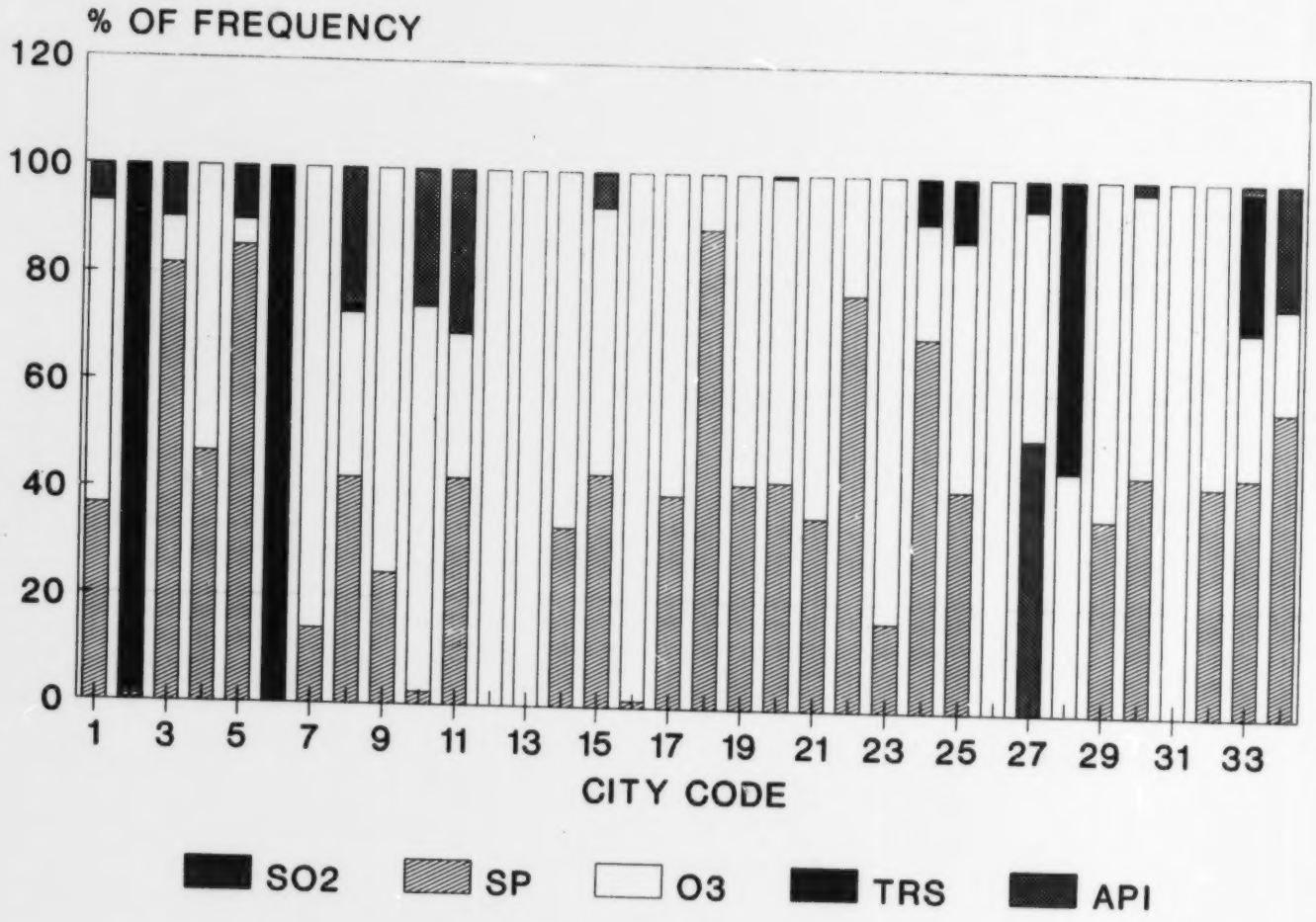
		NUMBER OF HOURS AQI IN RANGE					# OF HOURS POLLUTANT RESPONSIBLE FOR AQI >31						
Stn ID	CITY NAME	V-GOOD 0-15	GOOD 16-31	MOD 32-49	POOR 50-99	V-POOR 100+	SO_2	SP	O_3	TRS	CO	API	NO_2
44008	BURLINGTON	6792	1780	179	9	0	0	69	106	X	0	13	0
56051	CORNWALL	7561	917	200	66	0	1	2	1	262	0	0	0
32010	EAST YORK	7524	1132	102	2	0	0	85	9	X	0	10	0
35003	ETOBICOKE WEST	7511	792	76	1	0	0	36	41	X	0	0	0
35033	ETOBICOKE SOUTH	6342	2188	222	8	0	0	196	11	X	0	23	0
62030	FORT FRANCES *	921	41	117	43	0	X	X	X	160	X	X	X
28028	GUELPH	8094	612	43	0	0	0	6	37	X	X	0	X
29000	HAMILTON DOWNTOWN	6305	2247	206	2	0	0	88	64	4	0	52	0
29105	HAMILTON EAST	7859	852	49	0	0	0	12	37	X	X	0	X
29114	HAMILTON MOUNTAIN	7610	1107	43	0	0	0	1	31	0	X	11	0
29118	HAMILTON WEST	7256	1142	59	0	0	0	25	16	0	X	18	0
26029	KITCHENER	8381	362	17	0	0	0	X	16	X	0	X	1
52020	KINGSTON	6406	249	30	0	0	X	X	30	X	X	X	X
15001	LONDON	7669	998	91	2	0	0	31	62	X	0	0	0
46110	MISSISSAUGA	7575	971	204	10	0	0	93	107	X	0	14	0
27056	NIAGARA FALLS	7914	766	78	0	0	0	1	77	X	X	0	X
34020	N. YORK CENTRAL	7504	1188	65	3	0	0	27	41	X	0	0	0
34025	N. YORK WEST	6790	1770	48	0	0	0	43	5	X	0	0	0
75010	NORTH BAY	7719	908	62	0	0	0	26	36	X	0	0	0
44015	OAKVILLE	6908	1655	194	3	0	0	84	112	1	0	0	0
45025	OSHAWA	7507	1128	125	0	0	0	45	80	X	0	0	0
51001	OTTAWA	7829	876	36	0	0	0	28	8	X	0	0	0
14064	SARNIA	7529	1006	85	6	0	0	15	76	0	0	0	0
71068	SAULT STE. MARIE	7859	729	70	0	0	0	49	15	6	0	0	0
33003	SCARBOROUGH	7462	1180	112	6	0	0	49	55	X	0	14	0
27067	ST. CATHARINES	8282	468	10	0	0	0	0	10	X	0	0	0
77203	SUDBURY	7874	851	26	9	0	18	0	15	2	X	0	0
63200	THUNDER BAY	8634	115	11	0	0	0	0	5	6	0	0	0
31104	TORONTO DOWNTOWN	7908	811	39	2	0	0	15	26	X	0	0	0
31120	TORONTO WEST	7647	968	135	10	0	0	65	77	X	0	0	0
26045	WATERLOO	8163	580	12	0	0	0	0	12	X	X	0	X
12008	WINDSOR UNIVERSITY	7405	1069	99	1	0	0	43	57	X	0	0	0
12016	WINDSOR COLLEGE	7430	1146	174	9	0	0	82	50	48	0	3	0
36030	YORK	7273	1267	208	12	0	0	126	43	X	0	51	0

FOOTNOTES: * FORT FRANCES BECAME AN AQI SITE ON NOV. 15, 1989

X POLLUTANT NOT MEASURED AT SITE

Figure 3

PERCENT FREQUENCY OF UNACCEPTABLE AIR QUALITY ACCORDING TO POLLUTANT RESPONSIBLE AT AQI SITES ACROSS ONTARIO (1989)

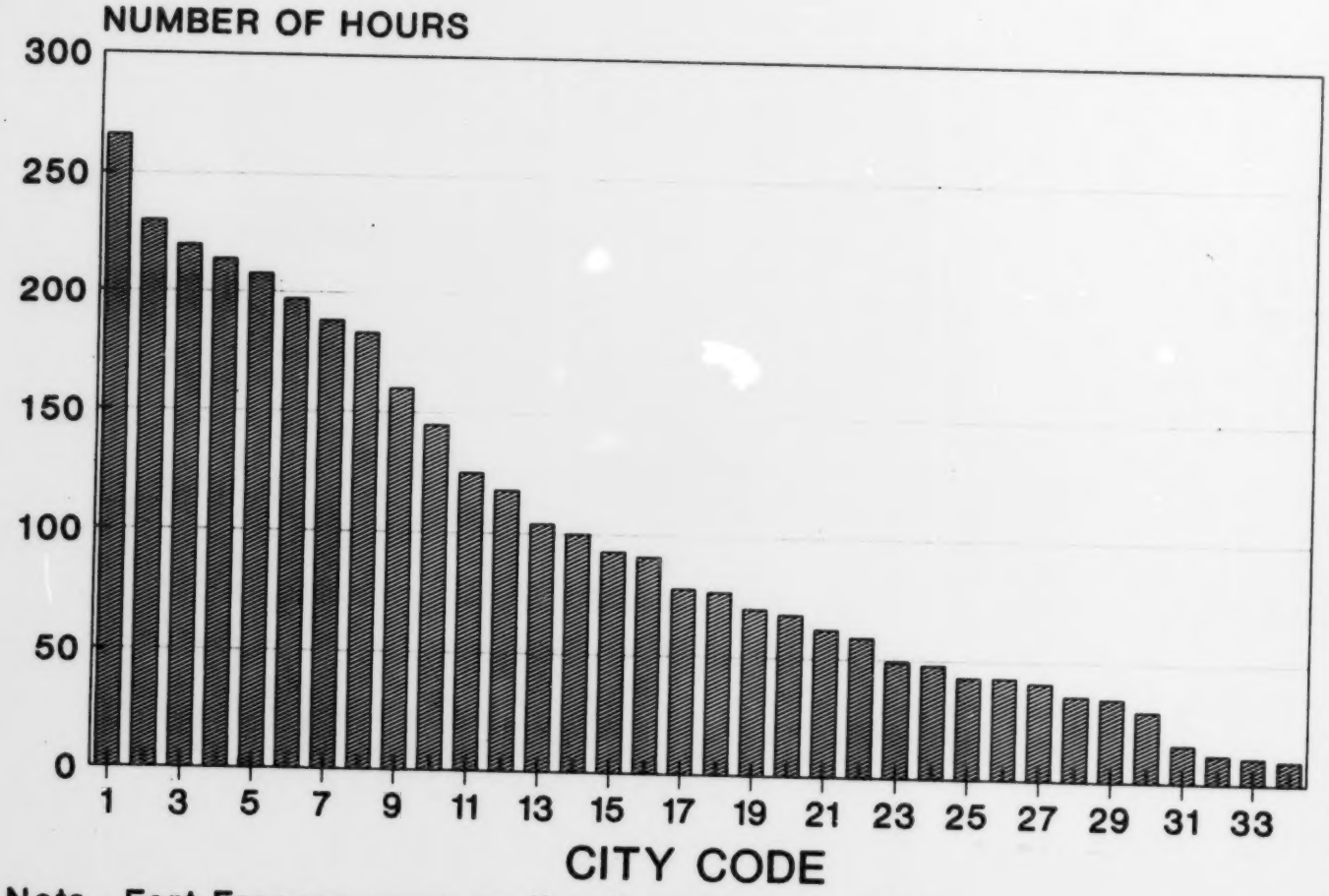


1 Burlington
2 Cornwall
3 East York
4 Etobicoke West
5 Etobicoke South
6 Fort Frances
7 Guelph
8 Hamilton Downtown
9 Hamilton East
10 Hamilton Mountain
11 Hamilton West
12 Kingston
13 Kitchener
14 London
15 Mississauga
16 Niagara Falls
17 North York Central
18 North York West
19 North Bay
20 Oakville
21 Oshawa
22 Ottawa
23 Sarnia
24 Sault Ste Marie
25 Scarborough
26 St. Catharines
27 Sudbury
28 Thunder Bay
29 Tor. Downtown
30 Tor. West
31 Waterloo
32 Windsor - U.
33 Windsor - College
34 York

Note: CO was not responsible for unacceptable Air Quality in 1989
NO2 was unacceptable for 1 hour at Kitchener in 1989
Fort Frances came on line Nov. 15, 1989

Figure 4

NUMBER OF HOURS OF UNACCEPTABLE AIR QUALITY AT AQI SITES IN ONTARIO (1989)



1 Cornwall
2 Etobicoke South
3 York
4 Mississauga
5 Hamilton Downtown
6 Oakville
7 Burlington
8 Windsor - College
9 Fort Frances
10 Tor. West
11 Oshawa
12 Scarborough
13 East York
14 Windsor - University
15 London
16 Sarnia
17 Niagara Falls
18 Etobicoke West
19 Sault Ste Marie
20 North York Central
21 North Bay
22 Hamilton West
23 Hamilton East
24 North York West
25 Hamilton Mountain
26 Guelph
27 Tor. Downtown
28 Ottawa
29 Sudbury
30 Kingston
31 Kitchener
32 Waterloo
33 Thunder Bay
34 St. Catharines

Note : Fort Frances came on line November 15, 1989

AIR POLLUTION INDEX (API)

12.1 Characteristics

The API continues to be the basis of an alert and control system to warn of deteriorating air quality and is derived from 24-hour running averages of sulphur dioxide and suspended particles. Research studies have linked respiratory illness to elevated concentrations of sulphur dioxide and particulates.

12.2 Legislation

The Ontario Environmental Protection Act (1971) authorizes the Minister of the Environment to order any point source not essential to public health or safety to curtail or cease its operations when air pollution levels which may be injurious to health occur.

12.3 Operation of the System

The API is computed each hour based on the past 24 hourly values for SO_2 and SP. If the index reaches a value of 32 (as for example when SO_2 = 0.1 ppm and SP = 1.0) and if the Duty Meteorologist predicts a continuation of adverse atmospheric conditions for at least six hours, an Air Pollution Advisory is issued. Owners of significant sources of pollution are advised to prepare for possible curtailment of operations.

If the index reaches 50, and if at least six hours of adverse atmospheric conditions are forecast, owners of major sources may be ordered to curtail operations. This is the First Alert Level.

A Second Alert is issued at an API of 75, and further curtailment may be ordered.

The Air Pollution Episode Threshold Level occurs at an API of 100. If atmospheric conditions are not expected to improve for at least six hours, owners of all sources not essential to public health or safety may be ordered to cease operations.

12.4 Air Pollution Index Levels (1980 - 1989)

A history of the Air Pollution Index levels over the last 10 years of its operation is provided in Table 4.

TABLE 4
TEN YEAR HISTORY OF THE AIR POLLUTION INDEX (1980-1989)

YEAR	CITY	NUMBER OCCASIONS >31	NUMBER OCCASIONS >49	MAXIMUM INDEX	DATE OF MAXIMUM
1980	TORONTO	0	0	31	Dec. 8
	HAMILTON	5	0	40	Oct. 16
	SUDBURY	0	0	23	Oct. 16
	WINDSOR (12008)	0	0	25	Feb. 8, 9
	WINDSOR (12016)	0	0	25	Dec. 29
	NIAGARA FALLS	0	0	18	May 24
	CONISTON	0	0	30	Feb. 10, Mar.9
	NEW SUDBURY	0	0	24	Jul. 3, Oct.16
	SARNIA	1	0	39	Mar. 20
	ST. CATHARINES	0	0	28	Feb. 20
1981	TORONTO	3	0	43	Nov. 14
	HAMILTON	8	0	38	Nov. 15
	SUDBURY	0	0	21	Jan. 31
	WINDSOR (12008)	1	0	42	Nov. 17
	WINDSOR (12016)	0	0	31	Nov. 17
	NIAGARA FALLS	0	0	25	Jan. 14
	CONISTON	0	0	20	Nov. 25
	NEW SUDBURY	0	0	22	Jan. 28-29
	SARNIA	1	0	34	Feb. 16
	ST. CATHARINES	0	0	27	Jan. 14-15

Table 4 (cont'd)

YEAR	CITY	NUMBER OCCASIONS >31	>49	MAXIMUM INDEX	DATE OF MAXIMUM
1982	TORONTO	3	2	54	Oct. 27
	HAMILTON	12	0	39	Dec. 2
	SUDBURY	0	0	15	Feb. 3
	WINDSOR (12008)	0	0	31	Oct. 26-27
	WINDSOR (12016)	1	0	35	Oct. 27
	NIAGARA FALLS	0	0	19	Jan. 19
	CONISTON	1	0	39	Feb. 5
	NEW SUDBURY	0	0	29	Feb. 5
	SARNIA	0	0	27	Mar. 11, Nov.7-8
	ST. CATHARINES	0	0	31	Nov. 18
1983	TORONTO	3	0	39	Jan. 29
	HAMILTON	1	0	37	Mar. 2
	SUDBURY	1	0	39	Jan. 22
	WINDSOR (12008)	0	0	26	Sep. 27
	WINDSOR (12016)	1	0	33	Mar. 1-2
	NIAGARA FALLS	0	0	17	Jan. 30
	CONISTON	0	0	19	Jan. 15
	NEW SUDBURY	1	1	63	Jan. 22
	SARNIA	0	0	28	Jan. 29
	ST. CATHARINES	0	0	23	Jan. 30
1984	TORONTO	2	1	50	Jan. 16
	HAMILTON	8	0	44	Nov. 27
	SUDBURY	0	0	23	Feb. 1
	WINDSOR (12008)	0	0	31	Oct. 2, Nov. 14
	WINDSOR (12016)	1	0	40	Feb. 15
	NIAGARA FALLS	0	0	20	Dec. 10-11
	CONISTON	0	0	29	Nov. 22
	NEW SUDBURY	0	0	23	Nov. 22
	SARNIA	0	0	27	Jan. 23
	ST. CATHARINES	0	0	24	Feb. 10-11
1985	TORONTO	0	0	25	Apr. 23
	HAMILTON	2	0	36	Apr. 23-24
	SUDBURY	0	0	31	Aug. 4
	WINDSOR (12008)	0	0	25	Dec. 20
	WINDSOR (12016)	0	0	30	Dec. 20
	NIAGARA FALLS	0	0	19	Apr. 24
	CONISTON	0	0	19	Mar. 26
	NEW SUDBURY	0	0	31	Jan. 7
	SARNIA	0	0	20	Mar. 27-28
	ST. CATHARINES	0	0	18	Dec. 6
1986	TORONTO	0	0	22	Jan. 17
	HAMILTON	5	0	37	May 15
	SUDBURY	0	0	23	Oct. 26
	WINDSOR (12008)	0	0	31	Jan. 16, Oct. 22, Dec. 16
	WINDSOR (12016)	0	0	29	Mar. 14
	NIAGARA FALLS	0	0	17	Jan. 17
	CONISTON	0	0	18	Mar. 20-21
	NEW SUDBURY	0	0	20	Apr. 23
	SARNIA	0	0	29	Dec. 17
	ST. CATHARINES	0	0	18	Jan. 17

Table 4 (cont'd)

YEAR	CITY	NUMBER OCCASIONS >31	>49	MAXIMUM INDEX	DATE OF MAXIMUM
1987	TORONTO	0	0	31	Oct. 16
	HAMILTON	2	0	38	Oct. 17
	SUDBURY	0	0	26	Mar. 14
	WINDSOR (12008)	0	0	24	Apr. 10
	WINDSOR (12016)	0	0	20	Jun. 25, Oct. 24
	NIAGARA FALLS	0	0	16	Oct. 16-17
	CONISTON	0	0	23	Mar. 9, Mar. 11
	NEW SUDBURY	0	0	22	Mar. 11, Mar.14, Aug. 27
	SARNIA	0	0	24	Jan. 28
	ST. CATHARINES	0	0	24	Oct. 16-17
1988	TORONTO DOWNTOWN	0	0	22	Jul. 7
	HAMILTON DOWNTOWN	1	0	43	Nov. 25-26
	SUDBURY	0	0	25	Jun. 17-18
	WINDSOR (12008)	0	0	28	Nov. 23;Dec.7
	WINDSOR (12016)	0	0	24	Jan. 8-9
	NIAGARA FALLS	0	0	20	Nov. 26
	&CONISTON	0	0	21	Apr. 19
	&NEW SUDBURY	0	0	21	Jun. 15
	SARNIA	0	0	26	Jan. 30
	ST. CATHARINES	0	0	14	Jul. 31
	*TORONTO WEST	0	0	13	Dec. 13
	*EAST YORK	0	0	22	Nov. 4
	*SCARBOROUGH	0	0	29	Sep. 30
	*NORTH YORK CENTRAL	0	0	23	Nov. 26
	*NORTH YORK WEST	0	0	27	Nov. 26
	*ETOBICOKE WEST	1	0	33	Nov. 26
	*ETOBICOKE SOUTH	0	0	29	Nov. 26
	*YORK	0	0	29	Nov. 26
	*BURLINGTON	0	0	27	Sep. 8-9
	*OAKVILLE	0	0	24	Sep. 2
	*OSHAWA	0	0	23	Jun. 15;Jul.7
	*MISSISSAUGA	0	0	18	Jul. 19
	*LONDON	0	0	22	Nov. 26
	*KITCHENER	0	0	26	Aug. 2
	*WATERLOO	0	0	17	Nov. 25-26
	*GUELPH	0	0	18	Nov. 26
	*HAMILTON EAST	0	0	20	Nov. 26
	*HAMILTON MOUNTAIN	0	0	23	Nov. 26
	*HAMILTON WEST	0	0	26	Nov. 25-26
	*SAULT STE MARIE	0	0	24	Jun. 20
	*NORTH BAY	0	0	16	Nov. 26
	*OTTAWA	0	0	18	Aug. 5;Dec.19-20
	*CORNWALL	0	0	20	Jun. 7
	*THUNDER BAY	0	0	5	Nov. 24-25

* started June, 1988
& closed May, 1988

Table 4 (cont'd)

YEAR	CITY	NUMBER OCCASIONS >31	NUMBER OCCASIONS >49	MAXIMUM INDEX	DATE OF MAXIMUM
1989	TORONTO DOWNTOWN	0	0	28	Oct. 26
	HAMILTON DOWNTOWN	3	0	37	Oct. 30-31
	SUDBURY	0	0	24	Sep. 14
	WINDSOR (12008)	0	0	27	Oct. 27
	WINDSOR (12016)	1	0	32	Oct. 27
	NIAGARA FALLS	0	0	21	Oct. 29
	SARNIA	0	0	26	Oct. 27-28
	ST. CATHARINES	0	0	18	Mar. 10
	TORONTO WEST	1	0	33	Oct. 26
	EAST YORK	1	0	34	Oct. 26
	SCARBOROUGH	1	0	34	Oct. 26
	NORTH YORK CENTRAL	0	0	26	Oct. 26
	NORTH YORK WEST	1	0	38	Dec. 27
	ETOBICOKE WEST	0	0	29	Oct. 26
	ETOBICOKE SOUTH	2	0	33	Oct. 26
	YORK	2	0	38	Oct. 26
	BURLINGTON	1	0	34	Aug. 12
	OAKVILLE	0	0	27	Oct. 26
	OSHAWA	0	0	29	Oct. 27-28
	MISSISSAUGA	1	0	35	Oct. 26
	LONDON	1	0	32	Oct. 27
	WATERLOO	0	0	19	Aug. 12
	GUELPH	0	0	19	Oct. 27-28
	HAMILTON EAST	0	0	24	Oct. 31
	HAMILTON MOUNTAIN	0	0	22	Oct. 28-29
	HAMILTON WEST	0	0	29	Oct. 31
	SAULT STE MARIE	0	0	24	Sep. 14
	NORTH BAY	0	0	19	Jan. 24,Feb.17
	OTTAWA	0	0	27	Jan. 24
	CORNWALL	0	0	19	Feb. 18

SECTION D
POLLUTANTS MEASURED BY HIGH VOLUME SAMPLER MONITORING (DAILY DATA)

TSP
TOTAL SUSPENDED PARTICULATE

13.1 Characteristics
Total suspended particulate is a generic term for airborne particles including smoke, fume, dust, fly ash and pollen. Composition varies with place and season but normally includes soil particulates, organic matter, sulphur and nitrogen compounds and metals such as lead. Size range is approximately .1 to 100 microns (diameter).

13.2 Effects
The greatest impact on health is from particles less than 10 microns in diameter which can penetrate deep into the lungs and contribute to respiratory disease. More serious health effects may be associated with suspended particulate matter which contains a toxic particulate component or which has absorbed a gaseous pollutant on the surface of the particles. Corrosion, soiling, damage to vegetation and visibility reduction are additional effects.

13.3 Ontario Criteria
120 µg/m^3 (24-hours)
60 µg/m^3 (1-year - geometric mean)

13.4 Sources
Natural sources include wind-blown soil, forest fires and plant pollen. Anthropogenic sources include combustion, incineration, construction, mining, metals smelting and processing, grinding processes, agricultural activity and transportation.

13.5 Method of Monitoring
By High Volume Sampler. Air is drawn through a filter at the rate of approximately 1.4 m^3/min. The (daily) mass concentration of total suspended particulate matter is computed from the mass of collected particles and the volume of air sampled.

13.6 Location and Frequency of Monitoring
The monitoring locations and the frequency of sampling at each location are indicated in the Appendix (Table A-3).

TSP was measured at 152 locations in 1989.

13.7 Monitoring Results
The distribution by percentile, the maximum, the arithmetic mean and the geometric mean are given in the Appendix (Table A-24). Also given are the number of exceedances of the 24-hour and one-year criteria. The lowest levels measured in the province were at Dorset (49010) where the annual mean was 19 µg/m^3.

The highest annual mean (107 µg/m^3) was recorded at Hamilton (29011) while the maximum daily value (870 µg/m^3) was measured in Toronto (31082). The greatest percentage of exceedances (42) of the 24-hour criterion occurred at both Hamilton (29011) and Sault Ste Marie (71042).

There were a total of 110 stations which exceeded the 24-hour criterion and 37 which exceeded the one-year criterion. (See Table 5).

13.8 Ten-Year Trend
The trend in mean annual TSP at locations which possess a ten-year record is shown in Table A-25 and is summarized for the province in Figure 5. Particulate levels have improved since 1980 by about 20%, however, there has been a 5% increase over the past year.

Pb
LEAD IN SUSPENDED PARTICULATE

14.1 Characteristics
A silver bluish, white, soft metal. Molecular weight 207.20.

14.2 Effects
Can degrade renal function, impair haemoglobin synthesis, and alter the nervous system.

14.3 Ontario Criteria
5.0 µg/m^3 (24-hours)
2.0 µg/m^3 (30-day - geometric mean)

14.4 Sources
Combustion of gasoline containing lead additives, secondary smelting of lead, battery manufacture, metal fabrication, some paint and glass manufacture, production of iron, steel, copper and nickel.

Lead emissions fell significantly after 1975 with the introduction of lead-free gasoline.

14.5 Method of Monitoring
Lead concentration on high volume filters determined by either X-Ray fluorescence or atomic absorption.

14.6 Location and Frequency of Monitoring

The monitoring locations and sampling frequency for each location are indicated in the Appendix (Table A-3).

Lead was measured at 84 locations in 1989.

14.7 Monitoring Results

The distribution by percentile, the maximum, the arithmetic mean and the geometric mean are given in the Appendix (Table A-26). Also given are the number of exceedances of the 24-hour criterion.

The greatest percentage of exceedances of the 24-hour criterion occurred at Mississauga (2414 Dixie Road) in the vicinity of a lead processing plant. The highest annual mean and the highest measured value occurred there also.

There were a total of six stations which exceeded the daily criterion at least once (see Table 5).

14.8 Ten-Year Trend

Lead levels in air have improved very significantly over the past ten years (see Figure 5).

The trend at selected Ontario cities is shown in Table A-27; the decline (90%) is largely due to the decreased use of leaded gasoline.

TRACE METALS

CADMIUM, CHROMIUM, IRON, MANGANESE NICKEL, VANADIUM

15.1 Characteristics

Name	Symbol	Properties	Molecular Weight
Cadmium	Cd	silver white, hexagonal	112.41
Chromium	Cr	steel grey, cubic	52.00
Iron	Fe	silver, cubic	58.85
Manganese	Mn	grey-pink, cubic	54.94
Nickel	Ni	silver, cubic	58.60
Vanadium	V	light grey, cubic	50.94

15.2 Effects

Depth of penetration into the respiratory system (and consequently risk to health) increases as particle size decreases. Of the heavy metals, cadmium, chromium, vanadium and manganese probably pose the greatest risk to human health. Soiling and damage to vegetation are additional effects.

15.3 Ontario Criteria

	24 Hour Criterion	
Cadmium	2	$\mu g/m^3$
Chromium	1.5	$\mu g/m^3$
Manganese	2.5	$\mu g/m^3$
Nickel	2	$\mu g/m^3$
Vanadium	2	$\mu g/m^3$

15.4 Sources

See Section 2.4.

15.5 Method of Monitoring

Collection is by High Volume Sampler (see Section 13.5). Following determination of TSP, a portion is cut from the exposed filter and ashed to destroy carbonaceous matter. The ashed sample is then digested in acid, and analyzed by atomic absorption spectrophotometry. The mass concentration of each metal in ambient air is calculated from the mass of each metal in TSP and the volume of air sampled, and expressed in $\mu g/m^3$.

15.6 Location and Frequency of Sampling

The monitoring locations and the sampling frequency for each location are indicated in the Appendix (Table A-3).

Metals were measured at 53 to 58 stations depending on the element.

15.7 Monitoring Results

The distribution by percentile of the daily data, the maximum, the arithmetic mean, the geometric mean, and the number of exceedances of the daily criterion are provided in the Appendix for iron, manganese, nickel, chromium, cadmium and vanadium. Table A-35 shows the maximum monitored levels for all the trace metals listed above. No table is provided for copper because studies have shown that copper measurements may be affected by contamination of the sample by the hi-vol motor. The contamination is highest when a new motor is installed and decreases with motor age. No attempt has been made to correct the data; however, it is available upon request.

Table 5 provides the highlights of particulate monitoring for 1989. It shows that nine exceedances of the air quality criteria for metals (exclusive of lead) occurred in 1989. Nickel was responsible for seven of these exceedances and manganese was the metal responsible for the other two. For nickel, four exceedances occurred at Copper Cliff (77070), one at Sudbury (77016) and two at Port Colborne (27047). For manganese, one exceedance was recorded at Sault Ste Marie (71042) and the other exceedance was measured at Hamilton (29025). Such exceedances may be harmful to vegetation.

15.8 Ten-Year Trend

The trend in mean annual iron is shown in Table A-29 and is summarized for Ontario in Figure 3. Iron shows a decline from 1980 to 1986 followed by a 28% increase over the past three years.

NO_3^-

NITRATE

16.1 Characteristics
Nitrogen oxide compounds, formed from atmospheric nitrogen and oxygen through high temperature combustion, photochemical reactions or bacterial action, may react with other compounds in the air to form nitrate (NO_3^-) or nitric acid (HNO_3).

16.2 Effects
Nitrate and nitric acid are involved in corrosion of materials, visibility degradation and acidic precipitation. They may also have an adverse effect on human health.

16.3 Ontario Criteria
None

16.4 Sources
Nitrate is primarily a secondary pollutant. Anthropogenic sources of nitrogen oxides or nitrates include all high temperature combustion processes, transportation, and fertilizer production and usage. Natural sources include lightning, biological decomposiion and photochemical reactions.

16.5 Method of Monitoring
Nitrates collected on glass fibre filters by a High Volume Sampler are extracted by digestion in distilled water. This extract is reduced to nitrite followed by colourimetric analysis for determination of the mass concentration of atmospheric nitrate.

16.6 Location and Frequency of Monitoring
The monitoring locations and the length of the sampling cycle (in days) for each location are indicated in the Appendix (Table A-3).

Nitrate monitoring was carried out at 58 locations in 1989.

16.7 Monitoring Results
The distribution by percentile, the maximum, the arithmetic mean, and the geometric mean are given in the Appendix (Table A-36). Highlights of monitoring are summarized in Table 5.

The highest annual mean nitrate concentration (5.1 µg/m³) occurred in Windsor (12008) and the highest concentration for a single day (28.0 µg/m³) occurred in Toronto (31104).

16.8 Ten-Year Trend
The trend in mean annual NO^-_3 at locations which possess a ten-year record is shown in Table A-37 and is summarized for the province in Figure 6.

Since nitrate is primarily the result of medium and long range transport of air pollution, its variability is largely related to meteorological variability.

SO^{2-}_4

SULPHATE

17.1 Characteristics
Sulphur dioxide is oxidized in the atmosphere to eventually form sulphate compounds. Intermediaries in the oxidation process such as H_2SO_3 and SO_3 rapidly combine with water vapour to form sulfuric acid aerosol. This type of process is dependent on atmospheric conditions.

17.2 Effects
Sulphate compounds have been linked to respiratory irritation and disease, corrosion of materials, reduction of visibility and the formation of acidic precipitation.

17.3 Ontario Criteria
None.

17.4 Sources
Sulphate is primarily a secondary pollutant. Anthropogenic sources of sulphur oxides include the burning of fuels containing sulphur (such as coal and oil), the smelting of sulphur-containing ores and the refining of petroleum. Natural sources include bacterial decomposition, volcanoes and forest fires.

17.5 Method of Monitoring
Sulphate collected on glass fibre filters by a High Volume Sampler is extracted by digestion in distilled water. This extract is analyzed colourimetrically and the mass concentration of sulphate is calculated. It has been found that artifact sulphates form on the glass fibre filters from ambient SO_2 and that reported sulphate concentrations are therefore artificially high. No attempt has been made to correct the data reported here.

17.6 Location and Frequency of Monitoring
The monitoring locations and the length of the sampling cycle (in days) for each location are indicated in the Appendix (Table A-3).

Sulphate monitoring was carried out at 58 locations in 1988.

17.7 Monitoring Results
The distribution by percentile, the maximum, the arithmetic mean, and the geometric mean are given in the Appendix (Table A-38). Highlights of monitoring are summarized in Table 5.

The highest annual mean sulphate concentration (12.1 µg/m³) was measured at Hamilton (29102) and the highest concentration for a single day occurred at Sault Ste Marie (71042).

17.8 Ten-Year Trend
The variability of the annual means for sulphate (see Figure 6 and Table A-39) may be explained by meteorological variability as in the case of nitrate (Section 16.8).

TABLE 5 - HIGHLIGHTS OF THE PARTICULATE MONITORING NETWORK 1989

	TSP	Pb	Cr	Fe	Mn	Ni	NO_3^-	SO_4^{2-}
LOWEST GEOM MEAN LOCATION CONCENTRATION	DORSET (49010) 19 ug/m3	SEVERAL .01 ug/m3	KESWICK (48141) .003 ug/m3	SEVERAL 0.2 ug/m3	MOORETOWN (14031) .009 ug/m3	SEVERAL .005 ug/m³	SUDBURY (77016) 0.4 ug/m³	THUNDER BAY (63022) 4.2 ug/m³
HIGHEST GEOM MEAN LOCATION CONCENTRATION	HAMILTON (29011) 107 ug/m3	MISSISSAUGA (46041) 1.04 ug/m³	HAMILTON (29011) .025 ug/m³	S.S.MARIE (71042) 6.0 ug/m3	S.S. MARIE (71042) .392 ug/m³	COPPER CLIFF (77070) .328 ug/m³	WINDSOR (12008) 5.1 ug/m³	HAMILTON (29102) 12.1 ug/m³
PERCENTAGE OF SAMPLES ABOVE 24-HR AQC LOCATION VALUE	HAMILTON (29011) S.S.MARIE (71042) 42	MISSISSAUGA (46041) 7	0	N/A	HAMILTON (29025) 2	COPPER CLIFF (77070) 8	N/A	N/A
NO. OF STATIONS EXCEEDING 24-HR AQC NUMBER	110	6	0	N/A	2	3	N/A	N/A
NO. OF STATIONS EXCEEDING 1-YR AQC NUMBER	37	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HIGHEST MEASURED VALUE - 24-HR LOCATION CONCENTRATION	TORONTO (31082) 870 ug/m³	MISSISSAUGA (46041) 21.99 ug/m³	TORONTO (31065) .290 ug/m³	S.S.MARIE (71042) 120 ug/m³	HAMILTON (29025) 3.950 ug/m³	COPPER CLIFF (77070) 4.360 ug/m³	TORONTO (31104) 28.0 ug/m³	S.S. MARIE (71042) 45.6 ug/m³
TOTAL NUMBER OF STATIONS NUMBER	152	84	53	62	54	57	58	58

Figure 5

10-Year Trend in Particulate Pollutants TSP,Pb and Fe

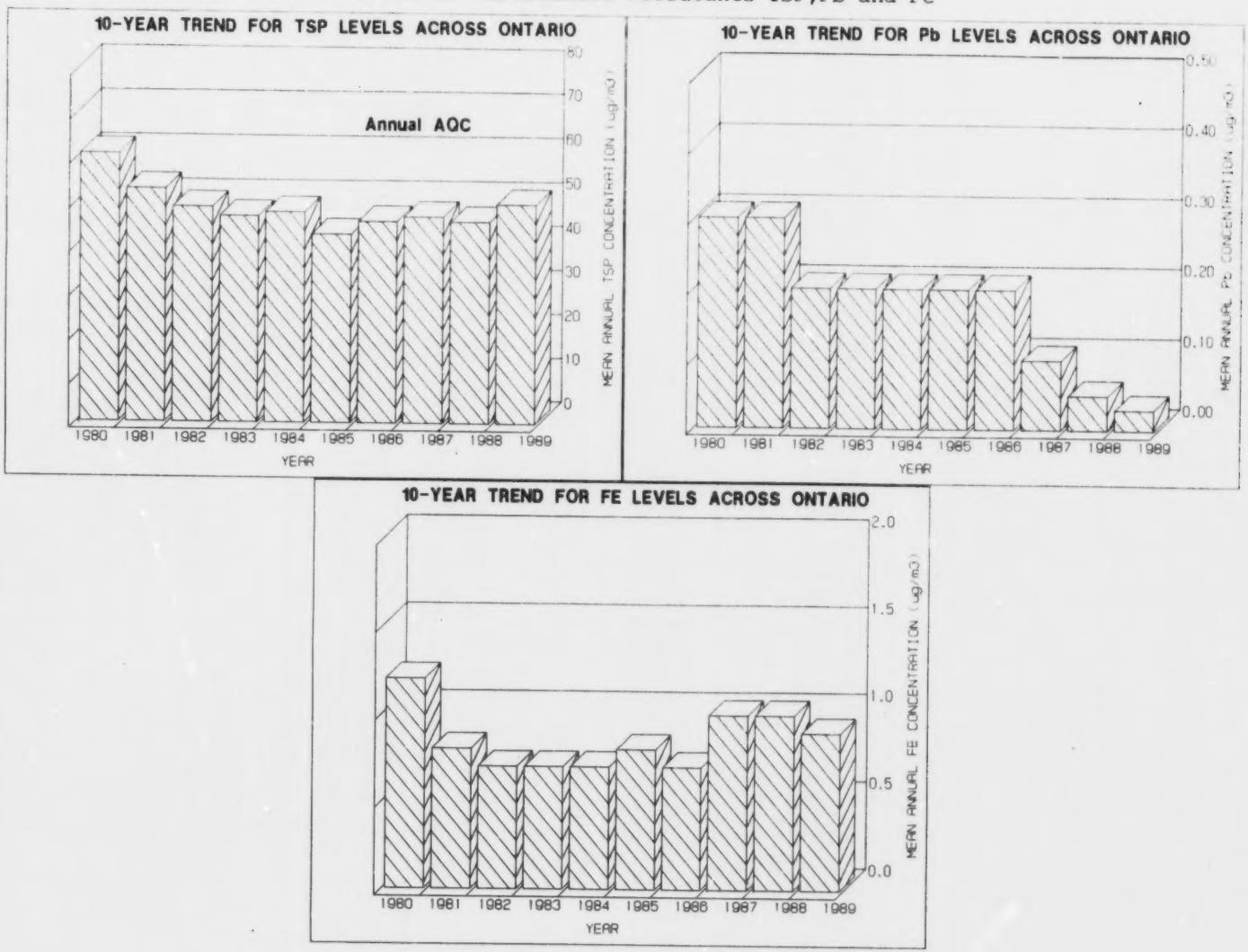
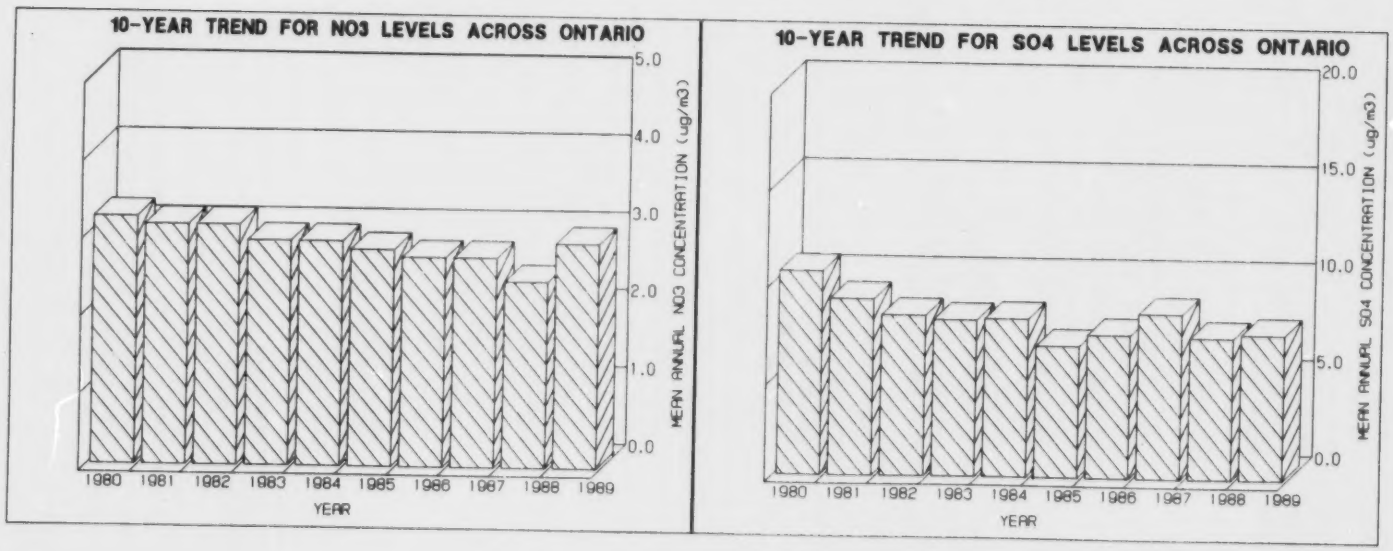


Figure 6

10-Year Trend in Particulate Pollutants NO_3 and SO_4



SECTION E METEOROLOGY AND AIR QUALITY

Weather conditions play a major role in the levels of air pollution. Weather factors which may affect air pollutant concentrations are:

- rainfall which may remove (washout) pollutants from the atmosphere;
- sunshine which causes photo chemical reactions of air pollutants which form smog;
- wind which transports and disperses pollutants emitted from sources;
- temperature which affects the amount of fuel used and the dispersion and chemical reactions of pollutants in the atmosphere.
- slow moving high pressure systems which allow pollutant concentrations to build up in the atmosphere.

18.0 Summary of Meteorological Conditions (1989)

For the third consecutive year, temperatures during the summer months were above normal, although the annual mean temperature in 1989 was below normal. The number of hours of bright sunshine was above normal for the winter, spring and fall seasons but was below normal during the summer months except during July when some locations in northern Ontario received up to 120% of normal values. Total precipitation for the year was slightly below normal but rainfall during the summer period was above normal.

Annual wind roses are presented in Figure 7 for selected meteorological sites across Ontario. The entire meteorological network is outlined in Table A-5 and Maps 6 and 7.

19.0 Discussion of Ozone and Suspended Particle Episodes

As mentioned in Section 9.0, ozone exceedances generally occur during the months May through September on hot sunny days with calm or light winds. In 1989, the number of hourly exceedances of ozone were well below the recorded totals during 1988; however, the 1989 annual average concentration was comparable to that of 1988 as shown in Figure 8. A comparison of the monthly averages revealed that the monthly average ozone levels during the summer of 1988 were higher than the summer of 1989. However, the monthly average ozone levels during the winter period of 1989 were higher than the corresponding winter months of 1988. The net result was a similar annual average ozone concentration in 1988 and 1989. No explanation is given at this time however, it is under investigation.

The highest ozone levels for 1989 were recorded during the episode of July 24 and 25. Temperatures across the province were in the low 30's, winds were light and the number of bright sunshine hours on both days were in excess of 12. Two days prior to the episode, back air trajectories showed that the air arriving in southern Ontario had originated from the mid-west United States and passed over the industrialized Ohio Valley area. At 0700 EDT on the 22nd, a high pressure system was centred over the southeastern U.S.A. By July 23rd, Ontario was experiencing a very light wind flow associated with this broad high pressure area. This air mass remained over Ontario until July 25th. During this time period, emissions from within Ontario were added to the ozone and its precursors which had previously been transported into the province, to produce the observed elevated ozone levels.

On July 26, a change in air mass occurred as rain associated with a low pressure system moved into the province and removed (through washout) the precursors conducive to ozone formation.

Elevated levels of suspended particles generally occur on days with light wind conditions when pollutants can be trapped close to the ground. As mentioned earlier, the number of cases when suspended particles exceeded the provincial criterion was second only to ozone during 1989.

The majority of SP exceedances were recorded during the period October 24 to 30, 1989. Monitoring sites in the Greater Metro Toronto areas were heavily impacted during this episode. The York site recorded moderate air quality for 67 hours and along with Etobicoke South it recorded the maximum one-hour AQI level of 73.

The October 24 to 30 period was characterized with very poor mixing resulting in pollutant buildup. The cause of this pollution buildup was a broad area of high pressure that stagnated over Ontario. On October 31, improved ventilation and dispersion conditions developed as the high pressure system was replaced by a cleaner air mass which moved into the province as a cold front swept eastward.

Figure 7 PERCENT FREQUENCY OF WINDS AT SELECTED SITES ACROSS ONTARIO

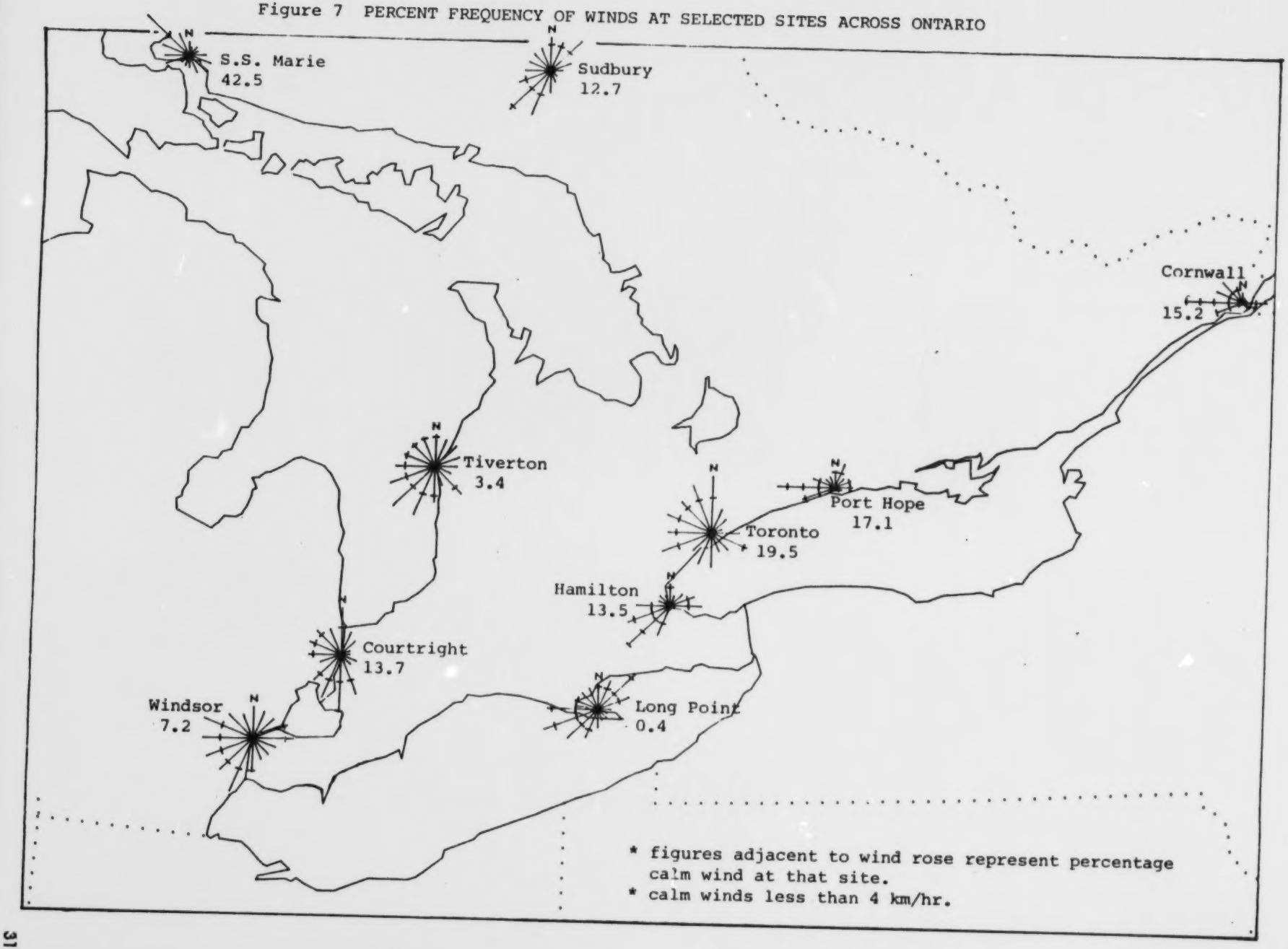
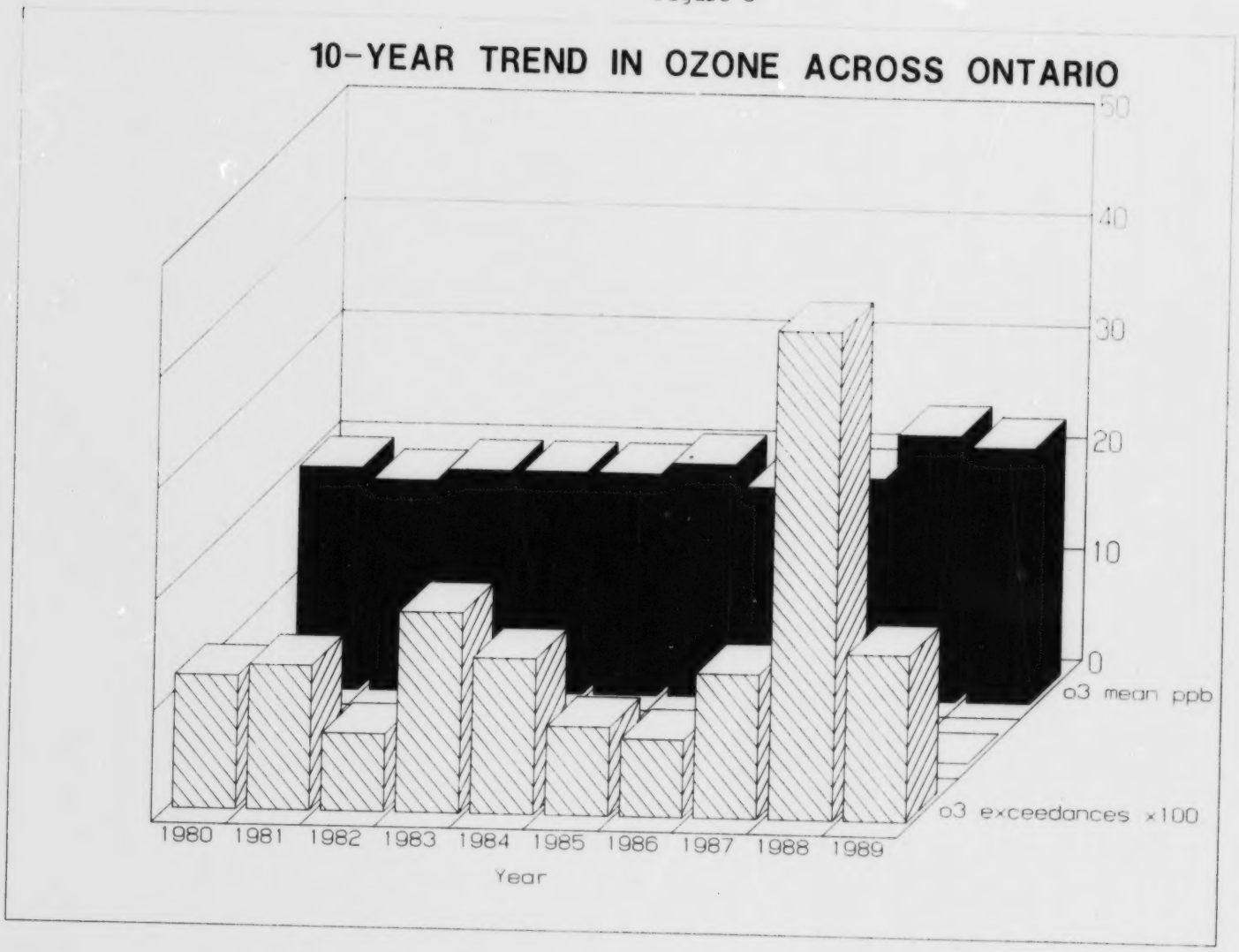


Figure 8


10-YEAR TREND IN OZONE ACROSS ONTARIO
50
40
30
20
10
0
o3 mean ppb
o3 exceedances ×100
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
Year

APPENDIX

Air Quality in Ontario 1989

Environment
Environnement
Ontario

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APPENDIX
AIR QUALITY IN ONTARIO
1989

TABLE OF CONTENTS

INTRODUCTION

TABLE A-1 THE CONTINUOUS (HOURLY) NETWORK (1989) 4
TABLE A-2 LOCATIONS OF CONTINUOUS (HOURLY) STATIONS (1989) 7
TABLE A-3 THE PARTICULATE (DAILY) NETWORK (1989) 10
TABLE A-4 LOCATIONS OF PARTICULATE (DAILY) STATIONS (1989) 14
TABLE A-5 THE METEOROLOGICAL NETWORK (1989) 18
TABLE A-6 SULPHUR DIOXIDE (SO_2) STATISTICS (1989) 19
TABLE A-7 10-YEAR TREND FOR SO_2 24
TABLE A-8 SUSPENDED PARTICLES (SP) STATISTICS (1989) 25
TABLE A-9 10-YEAR TREND FOR SP 28
TABLE A-10 TOTAL REDUCED SULPHUR (TRS) STATISTICS (1989) 29
TABLE A-11 10-YEAR TREND FOR TRS 32
TABLE A-12 CARBON MONOXIDE (CO) STATISTICS (1989) 33
TABLE A-13 10-YEAR TREND FOR CO 35
TABLE A-14 TOTAL HYDROCARBON (THC) STATISTICS (1989) 36
TABLE A-15 10-YEAR TREND FOR THC 37
TABLE A-16 REACTIVE HYDROCARBON (RHC) STATISTICS (1989) 38
TABLE A-17 NITROGEN DIOXIDE (NO_2) STATISTICS (1989) 39
TABLE A-18 10-YEAR TREND FOR NO_2 42
TABLE A-19 NITRIC OXIDE (NO) STATISTICS (1989) 43
TABLE A-20 10-YEAR TREND FOR NO 46
TABLE A-21 TOTAL NITROGEN OXIDES (NO_x) STATISTICS (1989) 47
TABLE A-22 OZONE (O_3) STATISTICS (1989) 50
TABLE A-23 10-YEAR TREND FOR O_3 54
TABLE A-24 TOTAL SUSPENDED PARTICULATE (TSP) STATISTICS (1989) 55
TABLE A-25 10-YEAR TREND FOR TSP 61
TABLE A-26 LEAD (Pb) STATISTICS (1989) 62
TABLE A-27 10-YEAR TREND FOR Pb 66
TABLE A-28 IRON (Fe) STATISTICS (1989) 67
TABLE A-29 10-YEAR TREND FOR Fe 70
TABLE A-30 MANGANESE (Mn) STATISTICS (1989) 71
TABLE A-31 NICKEL (Ni) STATISTICS (1989) 74
TABLE A-32 CHROMIUM (Cr) STATISTICS (1989) 77
TABLE A-33 CADMIUM (Cd) STATISTICS (1989) 80
TABLE A-34 VANADIUM (V) STATISTICS (1989) 83
TABLE A-35 MAXIMUM MONITORED LEVELS FOR TRACE METALS (1989) 86

TABLE OF CONTENTS (CONT'D)

TABLE A-36	NITRATE (NO^-_3) STATISTICS (1989)	89
TABLE A-37	10-YEAR TREND FOR NO^-_3	92
TABLE A-38	SULPHATE (SO^{2-}_4) STATISTICS (1989)	93
TABLE A-39	10-YEAR TREND FOR SO^{2-}_4	96
TABLE A-40	STATIONS USED IN TRENDS OF GASES (1980-1989)	97
TABLE A-41	STATIONS USED IN TRENDS OF PARTICULATES (1980-1989)	98
MAP 1	LOCATIONS OF CONTINUOUS MONITORING STATIONS - S. ONTARIO	99
MAP 2	LOCATIONS OF CONTINUOUS MONITORING STATIONS - N. ONTARIO	100
MAP 3	LOCATION OF AIR QUALITY INDEX (AQI) SITES	101
MAP 4	LOCATIONS OF DAILY MONITORING - S. ONTARIO	102
MAP 5	LOCATIONS OF DAILY MONITORING - N. ONTARIO	103
MAP 6	LOCATIONS OF METEOROLOGICAL MONITORING - S. ONTARIO	104
MAP 7	LOCATIONS OF METEOROLOGICAL MONITORING - N. ONTARIO	105

INTRODUCTION

This Appendix is intended for use in conjunction with the annual report Air Quality in Ontario 1989.

For each pollutant, tables provide the location of stations and supply sample distribution information including means, maxima and the number of exceedances of the Ontario criteria.

The entire continuous (hourly) network is summarized in Appendix Table A-1 and Maps 1 and 2. The table gives station name, numerical identifier, and pollutants measured. The numerical identifier is the station (ID) number, the first digit of which identifies the geographic region in which the station is located. The Ministry of the Environment has divided the province into 7 regions. Region 1 is Southwest with headquarters in London; Region 2 is West-central with headquarters in Hamilton; Region 3 and 4 is Central with headquarters in Toronto; Region 5 is South-east with headquarters in Kingston; Region 6 is North-west with headquarters in Thunder Bay and finally Region 7 is North-east with headquarters in Sudbury. Letter codes indicate whether data are telemetered (T) or chart-read (C). The column headings for pollutants are as follows:

SO_2	sulphur dioxide
SP	suspended particles or soiling index (COH)
CO	carbon monoxide
O_3	ozone
NO_2	nitrogen dioxide
NO	nitric oxide
NOx	total nitrogen oxides
THC	total hydrocarbon compounds
RHC	reactive (non-methane) hydrocarbon compounds
TRS	total reduced sulphur compounds
API	air pollution index
AQI	air quality index

Table A-2 gives detailed locations for the continuous monitoring network, including the type of station (TYP), the year the station was established (YR), the latitude (LAT) and longitude (LONG), and the elevation of the sampling inlet (ELEV) above ground level.

The Air Quality Index sites are shown in Map 3.

The particulate (daily) network is summarized in Appendix Table A-3 and Maps 4 and 5. The table gives station name, numerical identifier, and pollutants measured. Numerals indicate the monitoring cycle frequency in days. Some additional codes are defined in the key at the top of the table. The column headings for pollutants are as follows:

TSP	total suspended particulate
Cd	cadmium
Cr	chromium
Fe	iron
Mn	manganese
Ni	nickel
Pb	lead
V	vanadium
NO_3^-	nitrate
SO_4^{2-}	sulphate

Table A-4 gives detailed locations for the daily monitoring network. The meteorological network is summarized in Table A-5 and Maps 6 and 7. The table gives station name, numerical identifier, meteorological parameters measured and the height of the measurements. The statistical data and the 10-year trends for the various pollutants are provided in Tables A-6 through A-39.

ABBREVIATIONS

INS - insufficient data to compute relevant statistics.
YR - year that monitoring began.
TYP - survey type

TABLE A-1 THE CONTINUOUS (HOURLY) NETWORK (1989)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-89, HOURLY DATA

T = TELEMETRY C = CHART READ D = CALCULATED BY AQUIS YR = YEAR STATION BEGAN
TYP = A:AMBIENT SURVEY; I:SOURCE SPECIFIC SURVEY

STATION NAME	ID	TYP	YR	SO2	COH	CO	O3	NO2	NO	NOX	THC	RHC	CH4	TRS	API	AQI
HAMILTON- VICKERS	29114	A	85	T	T	.	T	T	T	T	.	.	.	T	T	T
HAMILTON- MAIN WEST	29118	A	85	T	T	.	T	T	T	T	.	.	.	T	T	T
TORONTO- MISSION	31049	A	72	.	T	T	.	T	T	T	.	.	.	.	.	.
TORONTO- BREADALBANE	31104	A	81	T	T	T	T	T	T	T	T	.	.	.	T	T
TORONTO- JUNCTION	31120	A	81	T	T	T	T	T	T	T	T	.	.	.	T	T
TORONTO- CN TOWER	31190	A	85	T	T	T	T	T	T	T	.	.	.	.	.	.
EAST YORK- LEASIDE	32010	A	88	T	T	T	T	T	T	T	.	.	.	.	T	T
SCARBOROUGH- LAWRENCE	33003	A	70	T	T	T	T	T	T	T	.	.	.	.	T	T
SCARBOROUGH- REDLAND	33019	A	69	T	.	.	.	.	.	.	.	.	.	.	.	.
N YORK- SCIENCE CTR	34002	A	69	T	.	T	T	T	T	T	.	.	.	.	.	.
N YORK- CENTRAL	34020	A	88	T	T	T	T	T	T	T	.	.	.	.	T	T
NORTH YORK- WEST	34025	A	88	T	T	T	T	T	T	T	.	.	.	.	T	T
ETOBICOKE- ELMCREST	35003	A	69	T	T	T	T	T	T	T	T	.	.	.	T	T
ETOBICOKE- QUEENSWAY	35005	I	68	T	.	.	.	.	.	.	.	.	.	.	.	.
ETOBICOKE- EVANS	35033	A	67	T	T	T	T	T	T	T	T	.	.	.	T	T
ETOBICOKE- MOE LAB	35050	A	76	T	.	.	.	.	.	.	.	.	.	.	.	.
YORK	36030	A	88	T	T	T	T	T	T	T	.	.	.	.	T	T
BURLINGTON	44008	A	79	T	T	T	T	T	T	T	.	.	.	.	T	T
OAKVILLE	44015	A	80	T	T	T	T	T	T	T	T	.	.	T	T	T
OSHAWA- RITSON	45025	A	79	T	T	T	T	T	T	T	.	.	.	.	T	T
MIS'AUGA- QUEENSWAY	46110	A	77	T	T	T	T	T	T	T	.	.	.	.	T	T
MISSISSAUGA	46117	I	87	T	.	.	.	.	.	.	.	.	.	T	.	.
ALLISTON	47035	A	81	.	.	.	T	.	.	.	.	.	.	.	.	.
BARRIE	47042	A	83	T	.	.	.	.	.	.	.	.	.	.	.	.
STOUFFVILLE	48002	A	74	T	.	.	T	T	T	T	.	.	.	.	.	.
DORSET	49010	A	81	C	.	.	C	D	C	C	.	.	.	.	.	.
OTTAWA- MCDONALD GDN	51001	A	71	T	T	T	T	T	T	T	.	.	.	.	T	T
KINGSTON	52020	A	88	.	.	.	T	.	.	.	.	.	.	.	T	T
CORNWALL- MEMORIAL P	56051	A	70	T	T	T	T	T	T	T	.	.	.	T	T	T
CORNWALL- 435 W 2ND	56068	I	75	.	.	.	.	.	.	.	.	.	.	T	.	.
CORNWALL	56071	I	84	.	.	.	.	.	.	.	.	.	.	T	.	.
PETERBORO- CITY HALL	59006	A	76	T	.	.	T	.	.	.	.	.	.	.	.	.
BALMERTOWN	61014	I	82	T	.	.	.	.	.	.	.	.	.	.	.	.
DRYDEN	61027	I	84	.	.	.	.	.	.	.	.	.	.	T	.	.
F FRANCES- CHURCH	62030	I	76	.	.	.	.	.	.	.	.	.	.	T	.	T
F FRANCES- COLONIZ'N	62032	I	76	.	.	.	.	.	.	.	.	.	.	T	.	.
THUNDER BAY- ALGOMA	63022	A	78	T	.	.	.	.	.	.	.	.	.	.	.	.
MARATHON- PENINSULA	63034	I	82	.	.	.	.	.	.	.	.	.	.	T	.	.
THUNDER B- MONTREAL	63046	I	76	.	.	.	.	.	.	.	.	.	.	T	.	.
RED ROCK	63084	I	81	.	.	.	.	.	.	.	.	.	.	T	.	.

TABLE A-1 (Cont.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-89, HOURLY DATA

T = TELEMETRY C = CHART READ D = CALCULATED BY AQUIS YR = YEAR STATION BEGAN
TYP = A:AMBIENT SURVEY; I:SOURCE SPECIFIC SURVEY

STATION NAME	ID	TYP	YR	SO2	COH	CO	O3	NO2	NO	NOX	THC	RHC	CH4	TRS	API	AQI
HURON PARK	10001	A	77	.	.	.	T	.	.	.	.	.	.	.	.	.
WINDSOR- WRIGHT	12007	A	84	T	.	.	.	.	.	.	.	.	.	T	.	.
WINDSOR- UNIVERSITY	12008	A	69	T	T	T	T	T	T	T	T	T	T	.	T	T
WINDSOR- WYANDOTTE	12013	A	76	T	.	.	.	.	.	.	.	.	.	.	.	.
WINDSOR- COLLEGE	12016	A	75	T	T	.	T	.	.	.	.	.	.	T	T	T
WINDSOR- HOWARD	12038	I	86	.	C	.	.	.	.	.	.	.	.	.	.	.
WINDSOR- DOUGALL	12039	I	86	.	C	.	.	.	.	.	.	.	.	.	.	.
WINDSOR- MALDEN	12048	I	84	T	.	.	.	.	.	.	.	.	.	.	.	.
WINDSOR- ALEXANDRINE	12049	I	86	.	C	.	.	.	.	.	.	.	.	.	.	.
MERLIN	13021	A	77	.	.	.	T	.	.	.	.	.	.	.	.	.
COURTRIGHT- HWY 40	14016	A	69	T	.	.	.	.	.	.	.	.	.	.	.	.
SARNIA- CENTENNIAL	14064	A	76	T	T	T	T	T	T	T	T	.	.	T	T	T
MANDAUMIN	14118	A	77	.	.	.	T	.	.	.	.	.	.	.	.	.
LONDON- FAIR GROUNDS	15001	A	70	T	T	T	T	T	T	T	T	.	.	.	T	T
LONGWOODS	15009	A	83	.	T	.	.	.	.	.	.	.	.	.	.	.
PARKHILL	15013	A	83	.	.	.	T	T	T	T	.	.	.	.	.	.
LONDON	15015	A	86	C	.	.	.	.	.	.	.	.	.	.	.	.
LONDON	15016	A	86	C	.	.	.	.	.	.	.	.	.	.	.	.
LONDON	15017	A	86	C	.	.	.	.	.	.	.	.	.	.	.	.
TIVERTON- CON RD 2	18007	A	79	T	.	.	T	.	.	.	.	.	.	T	.	.
SIMCOE	22071	A	75	T	.	.	T	T	T	T	.	.	.	.	.	.
NANTICOKE- CHEAPSIDE	22086	I	77	T	.	.	.	T	T	T	.	.	.	T	.	.
TOWNSEND	22094	I	86	T	.	.	.	.	.	.	.	.	.	.	.	.
LONG POINT	22901	A	79	T	.	.	T	T	T	T	.	.	.	.	.	.
NANTICOKE- WALPOLE	22904	I	79	.	.	.	.	.	.	.	.	.	.	T	.	.
NANTICOKE- RAINHAM	22907	I	84	T	T	.	.	.	.	.	.	.	.	T	.	.
KITCHENER	26029	A	76	T	.	T	T	T	T	T	.	.	.	.	.	T
WATERLOO	26045	A	88	T	T	.	T	.	.	.	.	.	.	.	T	T
VIOLET HILL- HWY 89	26048	A	88	.	T	.	.	.	.	.	.	.	.	.	.	.
CHIPPAWA- NORTON	27051	I	79	T	.	.	.	.	.	.	.	.	.	.	.	.
THOROLD- QUEEN	27052	I	83	T	T	.	.	.	.	.	.	.	.	T	.	.
NIAGARA F- STANLEY	27055	I	83	T	T	.	.	.	.	.	.	.	.	T	.	.
NIAGARA F- ALLENDALE	27056	A	83	T	T	.	T	.	.	.	.	.	.	.	T	T
ST. CATHARINES	27067	A	87	T	T	T	T	T	T	T	.	.	.	.	T	T
GUELPH- EXHIBITION	28028	A	86	T	T	.	T	.	.	.	.	.	.	.	T	T
HAMILTON- ELGIN	29000	A	87	T	T	T	T	T	T	T	T	T	T	T	T	T
HAMILTON- HUNTER	29001	A	61	.	T	.	.	.	.	.	.	.	.	.	.	.
HAMILTON- BARTON	29025	I	69	T	T	.	.	.	.	.	.	.	.	T	.	.
HAMILTON- BEACH	29102	A	84	T	T	T	.	T	T	T	.	.	.	T	.	.
HAMILTON- NASH	29105	A	85	T	T	.	T	.	.	.	.	.	.	.	T	T

TABLE A-1 (Cont.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-89, HOURLY DATA

T = TELEMETRY C = CHART READ D = CALCULATED BY AQUIS YR = YEAR STATION BEGAN
TYP = A:AMBIENT SURVEY; I:SOURCE SPECIFIC SURVEY

STATION NAME	ID	TYP	YR	SO2	COH	CO	O3	NO2	NO	NOX	THC	RHC	CH4	TRS	API	AQI
TERRACE BAY	63090	I	81	.	.	.	.	.	.	.	.	.	.	T	.	.
TERRACE BAY- MILL RD	63093	I	88	.	.	.	.	.	.	.	.	.	.	T	.	.
HAWKEYE LAKE	63100	A	83	.	.	.	C	.	.	.	.	.	.	.	.	.
THUNDER B- JAMES ST	63200	A	86	T	.	T	T	T	T	T	.	.	.	T	T	T
S.S.MARIE- WM. SCHOOL	71068	A	87	T	T	.	T	T	D	T	.	.	.	T	T	T
WAWA- MOTOR INN	71070	A	86	T	.	.	.	.	.	.	.	.	.	.	.	.
SMOOTH ROCK FALLS	72084	I	86	.	.	.	.	.	.	.	.	.	.	T	.	.
HOYLE/TIMMINS	72089	I	87	T	.	.	.	.	.	.	.	.	.	.	.	.
NORTH BAY	75010	A	79	T	T	T	T	T	D	T	.	.	.	.	T	T
SKEAD	77012	A	52	T	.	.	.	.	.	.	.	.	.	.	.	.
HANMER	77013	A	73	T	.	.	.	.	.	.	.	.	.	.	.	.
SUDBURY- ASH	77016	A	69	T	.	.	.	.	.	.	.	.	.	.	.	.
CONISTON- GOVERNMENT	77028	A	74	T	.	.	.	.	.	.	.	.	.	.	.	.
GARSON- FALCONBRIDGE	77065	A	76	T	.	.	.	.	.	.	.	.	.	.	.	.
NEW SUDBURY- KENNEDY	77075	A	76	T	.	.	.	.	.	.	.	.	.	.	.	.
SUDBURY- LONG LAKE	77096	A	80	T	.	.	.	.	.	.	.	.	.	.	.	.
MIKKOLA	77201	A	82	T	.	.	.	.	.	.	.	.	.	.	.	.
SUDBURY- SCIENCE N	77203	A	84	T	T	T	T	T	D	T	.	.	.	T	T	T
RAYSIDE- ST LAURENT	77206	A	85	T	.	.	.	.	.	.	.	.	.	.	.	.
COPPER CLIFF	77218	I	87	T	.	.	.	.	.	.	.	.	.	.	.	.
GATCHELL	77220	I	88	T	.	.	.	.	.	.	.	.	.	.	.	.
Provincial Totals				75	43	28	47	37	37	37	9	2	2	32	32	34

TABLE A-2 LOCATIONS OF CONTINUOUS (HOURLY) STATIONS (1989)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-89, HOURLY DATA

LOCATION	ID	TYP	YR	LAT	LONG	ELEV (M)
COLLEGE OF AGRIC TECH HURON PARK	10001	A	77	43:17	81:30	5
WRIGHT/WATER ST WINDSOR	12007	A	84	42:17	83:06	4
467 UNIVERSITY AV W WINDSOR	12008	A	69	42:19	83:03	8
FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	12013	A	76	42:19	83:00	6
COLLEGE/SOUTH ST WINDSOR	12016	A	75	42:18	83:04	4
2885 HOWARD AV WINDSOR	12038	I	86	38:41	82:54	1
DOUGALL/E.C. ROW W WINDSOR	12039	I	86	42:17	83:01	5
MALDEN RD. WINDSOR	12048	I	84	42:17	83:02	3
643 ALEXANDRINE WINDSOR	12049	I	86	42:17	83:01	1
MOE WATER PUMP STN, MIDDLE RD MERLIN	13021	A	77	42:15	82:13	3
HWY40 (OPP LAMBTON GS) COURTRIGHT	14016	A	69	42:48	82:29	4
CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	14064	A	76	42:59	82:24	3
M.T.C. SHED, MANDAUMIN	14118	A	77	42:57	82:12	4
WRN FAIR GROUNDS, KING/RECTORY LONDON	15001	A	70	42:59	81:13	4
LONGWOODS CONSERVATION AUTHORITY	15009	A	83	42:53	81:29	4
PUC BLDG PARKHILL	15013	A	83	43:10	81:41	5
951 COMMISSIONERS RD E LONDON	15015	A	86	42:58	81:13	4
801 COMMISSIONERS RD E LONDON	15016	A	86	42:57	81:13	4
8 MOUNTSFIELD DR LONDON	15017	A	86	42:58	81:15	4
CONCESSION RD 2 LOT A TIVERTON	18007	A	79	44:18	81:35	4
EXPERIMENTAL FARM SIMCOE	22071	A	75	42:51	80:16	4
CHEAPSIDE RD(3 KM S OF HWY 3) NANTICOKE	22086	I	77	42:52	80:00	5
TOWNLINE RD/CON 13 TOWNSEND	22094	I	86	42:54	80:09	4
PROVINCIAL PARK LONG POINT	22901	A	79	42:35	80:23	4
WALPOLE S PS, SANDUSK RD NANTICOKE	22904	I	79	42:50	80:02	4
RAINHAM RD (NEAR STELCO GATE) NANTICOKE	22907	I	84	42:49	80:05	4
EDNA/FREDERICK STS KITCHENER	26029	A	76	43:27	80:28	5
WEBER/UNIVERSITY WATERLOO	26045	A	88	43:29	80:31	4
NIAGARA FALLS RD/ONTARIO ST THOROLD	27042	I	78	43:06	79:12	5
HOLY T CHURCH, NORTON/PORTAGE CHIPPAWA	27051	I	79	43:04	79:04	16
185 QUEEN ST S THOROLD	27052	I	83	43:07	79:12	1
STP GROUNDS, STANLEY AV NIAGARA FALLS	27055	I	83	43:08	79:05	4
ALLENDALE AV NIAGARA FALLS	27056	A	83	43:05	79:05	5
ARGYLE CRESCENT ST CATHARINES	27067	A	87	43:10	79:14	4
EXHIBITION ST/CLARK ST GUELPH	28028	A	86	43:33	80:16	4
ELGIN/KELLY HAMILTON	29000	A	87	43:15	79:52	4
HUGHSON/HUNTER HAMILTON	29001	A	61	43:15	79:52	9
BARTON/WENTWORTH HAMILTON	29025	I	69	43:16	79:51	4
467 BEACH BLVD HAMILTON	29102	A	84	43:17	79:47	4
NASH RD/KENTLEY DR HAMILTON	29105	A	85	43:14	79:46	4

TABLE A-2 (CONT.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-89, HOURLY DATA

LOCATION	ID	TYP	YR	LAT	LONG	ELEV (M)
VICKERS RD/EAST 8TH ST HAMILTON	29114	A	85	43:14	79:52	3
MAIN ST/W HWY 403 HAMILTON	29118	A	85	43:15	79:54	3
MISSION, 381 YONGE ST TORONTO	31049	A	72	43:40	79:23	4
26 BREADALBANE TORONTO	31104	A	81	43:40	79:23	15
PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	31120	A	81	43:40	79:27	9
CN TOWER, 301 FRONT ST W TORONTO	31190	A	85	43:39	79:23	444
LEASIDE HYDRO STATION EAST YORK	32010	A	88	43:42	79:21	5
LAWRENCE/KENNEDY SCARBORO	33003	A	70	43:45	79:16	4
REDLAND CR (SCARB BLUFFS) SCARBORO	33019	A	69	43:43	79:14	1
SC CTR, 770 DON MILLS RD NORTH YORK	34002	A	69	43:43	79:20	17
HENDON AVE (YONGE ST/FINCH AVE) NORTH YORK	34020	A	88	43:47	79:25	5
35 EDGAR AVE, NORTH YORK	34025	A	88	43:43	79:32	5
ELMCREST RD (CENTENNIAL PK) ETOBICOKE	35003	A	69	43:39	79:35	4
QUEENSWAY HOSPITAL ETOBICOKE	35005	I	68	43:37	79:34	9
EVANS/ARNOLD AV ETOBICOKE	35033	A	67	43:37	79:31	3
125 RESOURCES RD (MOE LAB) ETOBICOKE	35050	A	76	43:43	79:32	18
CLEARVIEW HEIGHTS YORK	36030	A	88	43:42	79:29	5
HWY2/NORTH SHORE BLVD E BURLINGTON	44008	A	79	43:19	79:48	17
BRONTE RD/WOBURN CRES OAKVILLE	44015	A	80	43:24	79:44	5
PS, RITSON RD/OLIVE AV OSHAWA	45025	A	79	43:53	78:51	5
QUEENSWAY W/HURONTARIO ST MISSISSAUGA	46110	A	77	43:34	79:37	5
MEADOW PK, APPLE LANE COUNTRY CLUB, MIS'A	46117	I	87	43:31	79:36	5
509 VICTORIA ST E ALLISTON	47035	A	81	44:09	79:51	4
ARMOURY BLDG, PARK/PARKSIDE ST BARRIE	47042	A	83	44:23	79:42	12
HWY47/E OF HWY48 STOUFFVILLE	48002	A	74	43:58	79:16	5
HWY 117/PAINT LAKE RD DORSET	49010	A	81	45:13	78:56	3
MCD GDS, RIDEAU/WURTENBURG ST OTTAWA	51001	A	71	45:26	75:41	4
NAPIER ST, KINGSTON	52020	A	88	44:14	76:31	5
MEMORIAL PK, BEDFORD/THIRD STS CORNWALL	56051	A	70	45:01	74:44	4
SCHOOL, 435 SECOND ST W CORNWALL	56068	I	75	45:01	74:44	6
ST PETER'S SCHOOL CORNWALL	56071	I	84	44:59	75:27	4
CITY HALL, 500 GEORGE ST PETERBORO	59006	A	76	44:19	78:19	18
SEWAGE TREATMENT PLT BALMERTOWN	61014	I	82	51:03	93:44	6
35 VAN HORNE AV DRYDEN	61027	I	84	49:47	92:50	15
PORTAGE/CHURCH ST FORT FRANCES	62030	I	76	48:37	93:24	4
CEMETERY,COLONIZATION RD W FORT FRANCES	62032	I	76	48:37	93:25	5
HOSPITAL, 35 ALGOMA ST N THUNDER BAY	63022	A	78	48:26	89:13	22
PENINSULA BLDG MARATHON	63034	I	82	48:43	86:23	12
CAN-CAR, MONTREAL ST THUNDER BAY	63046	I	76	48:21	89:18	3
RECREATION CENTRE RED ROCK	63084	I	81	48:57	88:15	7

TABLE A-2 (CONT.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-89, HOURLY DATA

LOCATION	ID	TYP	YR	LAT	LONG	ELEV (M)
ST MARTIN SCHOOL TERRACE BAY	63090	I	81	48:47	89.19	8
MILL/ SOUTH CAMP RD TERRACE BAY	63093	I	81	48:47	89.17	4
HAWKEYE LAKE	63100	A	83	48:40	89:29	4
MTC 615 JAMES ST S THUNDER BAY	63200	A	86	48:23	89:17	3
WM. MERRIFIELD SCHOOL SAULT STE MARIE	71068	A	87	46:32	84:21	3
WAWA MOTOR INN WAWA	71070	A	86	47:59	84:47	3
ROSS ROAD SMOOTH ROCK FALLS	72084	A	86	49:17	81:37	4
R.R.#1 LOT 11 CONC. 1 HOYLE	72089	I	87	48:33	81:04	3
OPP STN NORTH BAY	75010	A	79	46:19	79:27	4
SKEAD	77012	A	52	46:39	80:46	5
HANMER	77013	A	73	46:39	80:57	5
WATER TANK, ASH ST SUDBURY	77016	A	69	46:30	81:00	3
GOVERNMENT RD/EDWARD ST CONISTON	77028	A	74	46:29	80:51	5
FALCONBRIDGE RD GARSON	77065	A	76	46:34	80:51	5
KENNEDY ST NEW SUDBURY	77075	A	76	46:31	80:57	5
LONG LAKE RD (VILLA LOYOLA) SUDBURY	77096	A	80	46:24	81:01	4
MIKKOLA (J HAMILTON SCHOOL) WALDEN	77201	A	82	46:25	81:07	5
SCIENCE NORTH SUDBURY	77203	A	84	46:28	80:59	10
ST LAURENT/REGIONAL RD RAYSIDE	77206	A	85	46:36	81:06	4
LOT 2-PLAN M-1025 COPPER CLIFF	77218	I	87	46:28	81:04	4
GATCHELL SUDBURY	77220	I	68	46:29	89:01	3

TABLE A-3 THE PARTICULATE (DAILY) NETWORK (1989)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-89, DAILY DATA

SINGLE DIGITS = CYCLE DURATION IN DAYS TYP = A:AMBIENT SURVEY; I:SOURCE SPECIFIC SURVEY
W = WEEKDAY ONLY S = SEASONAL

STATION NAME	ID	TYP	YR	TSP	Cd	Cr	Cu	Fe	Mn	Ni	Pb	V	NO3	SO4
GODERICH	10015	A	74	6	.	.	.	.	.	.	.	.	.	.
WINDSOR- CITY HALL	12002	A	69	6	6	6	6	6	6	6	6	6	6	6
WINDSOR- RIVERSIDE	12005	A	78	6	6	6	6	6	6	6	6	6	.	.
LA SALLE	12006	A	83	6	.	.	.	.	.	.	.	.	.	.
WINDSOR- WRIGHT	12007	A	84	6	.	.	.	6	.	.	6	.	.	.
WINDSOR- UNIVERSITY	12008	A	70	1	1	1	1	1	1	1	1	1	1	1
LITTLE RIVER	12009	A	71	6	.	.	.	.	.	.	6	.	.	.
WINDSOR- MANNING	12010	A	71	6	6	6	6	6	6	6	6	6	.	.
WINDSOR-DROUILLARD	12011	A	88	6	6	6	6	6	6	6	6	.	.	.
WINDSOR- WYANDOTTE	12013	A	71	6	6	6	6	6	6	6	6	6	.	.
WINDSOR- PROSPECT	12015	A	71	6	6	6	6	6	6	6	6	6	6	6
WINDSOR- COLLEGE	12016	A	75	6	.	.	.	6	.	.	.	.	.	.
WINDSOR- GEORGE	12036	A	77	6	.	.	.	.	.	.	.	.	.	.
WINDSOR- CALIFORNIA	12037	A	77	6	.	.	.	.	.	.	.	.	.	.
WINDSOR- HOWARD	12038	I	77	6	6	6	6	6	6	6	6	6	6	6
WINDSOR- DOUGALL 1	12039	I	78	6	6	6	6	6	6	6	6	6	6	6
WINDSOR- DOUGALL 2	12047	A	85	6	6	6	6	6	6	6	6	6	6	6
WINDSOR- ALEXANDRINE	12049	A	85	6	6	6	6	6	6	6	6	6	6	6
WINDSOR-CAPITOL	12051	A	86	6	6	6	6	6	6	6	6	6	6	6
AMHERSTBURG	12053	A	81	6	.	.	.	.	.	.	.	.	.	.
CHATHAM	13003	A	69	6	6	6	6	6	6	6	6	6	.	.
THAMESVILLE	13007	I	89	6	.	.	.	.	.	.	.	.	.	.
THAMESVILLE	13008	I	89	6	.	.	.	.	.	.	.	.	.	.
SARNIA- MITTON	14001	A	62	6	.	.	.	.	.	.	.	.	.	.
COURTRIGHT- HWY 40	14016	A	69	1	1	1	1	1	1	1	1	1	1	1
CORUNNA- R.R. #1	14030	A	78	6	6	6	6	6	6	6	6	6	.	.
MOORETOWN	14031	A	78	6	6	6	6	6	6	6	6	6	.	.
SARNIA- POINT EDWARD	14054	A	66	6	.	.	.	.	.	.	.	.	.	.
CORUNNA- ST CLAIR	14059	A	76	6	.	.	.	.	.	.	.	.	.	.
SARNIA- CENTENNIAL	14064	A	76	6	6	6	6	6	6	6	6	6	6	6
SARNIA- DAVID	14151	A	79	6	.	.	.	.	.	.	.	.	.	.
SARNIA- CHRISTINA	14152	I	87	3	.	.	.	3	3	.	3	.	.	.
SARNIA- MARA	14153	I	87	3	.	.	.	3	3	.	3	.	.	.
LONDON- FAIR GROUNDS	15001	A	70	6	6	6	6	6	6	6	6	6	6	6
ST THOMAS- ALEX'DRIA	15006	I	75	6	.	.	.	.	.	.	.	.	.	.
ST THOMAS- EDGEWARE	15008	I	81	6	.	.	.	.	.	.	6	.	.	.
LONGWOODS	15009	A	83	6	6	6	6	6	6	6	6	6	.	.
LONDON- POND MILLS	15014	A	86	6	6	6	6	6	6	6	6	6	6	6
LONDON- 951 COMMIS'ER	15015	A	86	6	6	6	6	6	6	6	6	6	6	6
LONDON- 801 COMMIS'ER	15016	A	86	6	6	6	6	6	6	6	6	6	6	6

TABLE A-3 (CONT.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-89, DAILY DATA

SINGLE DIGITS = CYCLE DURATION IN DAYS TYP = A:AMBIENT SURVEY; I:SOURCE SPECIFIC SURVEY
W = WEEKDAY ONLY S = SEASONAL

STATION NAME	ID	TYP	YR	TSP	Cd	Cr	Cu	Fe	Mn	Ni	Pb	V	NO3	SO4
LONDON- MOUNTSFIELD	15017	A	86	6	6	6	6	6	6	6	6	6	6	6
BEACHVILLE- ST ANTH'Y	17006	I	74	6	.	.	.	.	.	.	.	.	.	.
BEACHVILLE- CYANAMIDE	17014	I	74	6	.	.	.	.	.	.	.	.	.	.
INGERSOLL	17020	I	81	6	.	.	.	.	.	.	.	.	.	.
EMBRO	17021	I	83	3	.	.	.	.	.	.	.	.	.	.
JARVIS- JAMES	22087	A	80	6	.	.	.	.	.	.	.	.	.	.
PORT DOVER- ST GEORGE	22090	A	83	6	.	.	.	.	.	.	.	.	.	.
JARVIS- RAINHAM	22092	I	85	6	.	.	.	.	.	.	.	.	.	.
NANTICOKE- WALPOLE	22904	I	84	6	.	.	.	.	.	.	.	.	6	6
NANTICOKE- RAINHAM	22907	I	84	6	6	6	6	6	6	6	6	6	.	.
NANTICOKE- RD	22961	I	79	6	.	.	.	.	.	.	.	.	.	.
NANTICOKE- GS	22964	I	84	6	.	.	.	.	.	.	.	.	.	.
KITCHENER- EDNA	26029	A	76	6	6	6	6	6	6	6	6	6	6	6
ALLISTON- VIOLET HILL	26048	I	87	6	.	.	.	.	.	.	.	.	.	.
ST CATHARINES- KING	27008	A	87	6	6	6	6	6	6	6	6	6	6	6
WELLAND- ALBERTA	27045	I	78	6	.	.	.	.	.	.	.	.	.	.
PORT COLBORNE- DAVIS	27047	I	79	6	.	.	.	.	.	6	.	.	.	.
NIAGARA F- VICTORIA	27050	I	79	6	.	.	.	.	.	.	.	.	.	.
CHIPPAWA- NORTON	27051	I	79	6	.	.	.	.	.	.	.	.	.	.
THOROLD- QUEEN	27052	I	82	6	.	.	.	.	.	.	.	.	.	.
NIAGARA F- STANLEY	27055	I	82	6	.	.	.	.	.	.	.	.	.	.
NIAGARA F- ALLENDALE	27056	A	83	6	.	.	.	.	.	.	.	.	6	6
GUELPH- HANLON	28027	I	81	6	.	.	.	.	.	.	.	.	.	.
GUELPH- EXHIBITION	28028	A	86	6	.	.	.	.	6	.	6	.	6	6
FERGUS- ST GEORGE	28040	I	89	6	.	.	.	.	.	.	.	.	.	.
FERGUS- NICHOLS	28041	I	89	6	.	.	.	.	.	.	.	.	.	.
HAMILTON- ELGIN	29000	A	88	1	.	.	.	.	.	.	.	.	.	.
HAMILTON- KENILWORTH	29009	A	69	6	.	.	.	.	.	.	.	.	.	.
HAMILTON- BURLINGTON	29011	I	73	6	6	6	6	6	6	6	6	6	6	6
HAMILTON- WELLINGTON	29012	A	69	6	6	6	6	6	6	6	6	6	6	6
HAMILTON- CHATHAM	29017	A	69	6	6	6	6	6	6	6	6	6	6	6
HAMILTON- WENTWORTH	29025	I	69	6	6	6	6	6	6	6	6	6	6	6
HAMILTON- HUGHSON	29067	A	73	6	6	6	6	6	6	6	6	6	.	.
HAMILTON- CUMBERLAND	29087	A	79	6	.	.	.	.	.	.	.	.	6	6
HAMILTON- BARTON	29089	A	80	6	.	.	.	.	.	.	.	.	.	.
HAMILTON- BAY	29098	A	83	6	6	6	6	6	6	6	6	6	6	6
HAMILTON- BEACH	29102	A	85	1	6	6	6	6	6	6	6	6	6	6
GREENSVILLE- OFIELD	29111	I	86	6	.	.	.	.	.	.	.	.	.	.
GREENSVILLE- HARVEST	29112	I	87	6	.	.	.	.	.	.	.	.	.	.
HAMILTON- GERTRUDE	29113	A	86	6	.	.	.	.	.	.	.	.	.	.

TABLE A-3 (CONT.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-89, DAILY DATA

SINGLE DIGITS = CYCLE DURATION IN DAYS TYP = A:AMBIENT SURVEY; I:SOURCE SPECIFIC SURVEY
W = WEEKDAY ONLY S = SEASONAL

STATION NAME	ID	TYP	YR	TSP	Cd	Cr	Cu	Fe	Mn	Ni	Pb	V	NO3	SO4
HAMILTON- VICKERS	29114	A	85	6	6	6	6	6	6	6	6	6	6	6
HAMILTON- MAIN W	29118	A	85	6	.	.	.	.	.	.	.	.	.	.
HAMILTON- MORLEY	29119	A	86	6	.	.	.	.	.	.	.	.	.	.
HAMILTON- DUNDURN	29122	A	87	6	.	.	.	.	.	.	.	.	.	.
HAMILTON- BUCHANAN PK	29124	A	88	6	.	.	.	.	.	.	.	.	.	.
HAMILTON- EWEN	29130	A	87	6	.	.	.	.	.	.	.	.	.	.
HAMILTON- ALBION S	29135	A	87	6	.	.	.	.	.	.	.	.	.	.
TORONTO- BRUCE PS	31045	I	86	1	1	1	1	1	1	1	1	1	.	.
TORONTO- MOSLEY	31058	I	73	1	1	1	1	1	1	1	1	1	.	.
TORONTO- EASTERN	31065	I	87	1	1	1	1	1	1	1	1	1	.	.
TORONTO- HAMILTON	31082	I	74	1	.	.	.	.	.	.	1	.	.	.
TORONTO- TECUMSETH	31085	I	79	1	1	1	1	1	1	1	1	1	.	.
TORONTO- BREADALBANE	31104	A	81	1	1	1	1	1	1	1	1	1	1	1
TORONTO- JUNCTION	31120	A	81	6	6	6	6	6	6	6	6	6	.	.
TORONTO- BATHURST	31181	I	83	1	1	1	1	1	1	1	1	1	.	.
TORONTO- FORT YORK	31183	I	87	1	1	1	1	1	1	1	1	1	.	.
EAST YORK- LEASIDE	32010	A	87	6	.	.	.	.	.	.	6	.	6	6
SCARBORO- LAWRENCE	33003	A	70	6	.	.	.	.	.	.	6	.	6	6
NORTH YORK-CENTRAL	34020	A	89	6	.	.	.	.	.	.	6	.	6	6
NORTH YORK-WEST	34025	A	87	6	.	.	.	.	.	.	6	.	6	6
ETOBICOKE- ELMCREST	35003	A	69	6	.	.	.	.	.	.	6	.	6	6
ETOBICOKE- EVANS	35033	A	69	6	.	.	.	.	.	.	6	.	6	6
ETOBICOKE- MOL LAB	35051	A	80	1	.	.	.	.	.	.	.	.	.	.
YORK- EDGAR	36030	A	89	6	.	.	.	.	.	.	6	.	6	6
OAKVILLE- SEWAGE PL	44005	I	86	W	W	W	W	W	W	W	W	W	.	.
BURLINGTON- N. SHORE	44008	A	79	6	.	.	.	.	.	.	6	.	6	6
OAKVILLE- BRONTE RD	44015	I	80	6	.	.	.	.	.	.	6	.	6	6
PICKERING- FIRE HALL	45001	I	70	1	.	.	.	.	.	.	.	.	.	.
AJAX- HOSPITAL	45007	I	75	1	.	.	.	.	.	.	.	.	.	.
OSHAWA- RITSON	45025	A	79	6	.	.	.	.	.	.	6	.	6	6
BRAMALEA- FIRE HALL	46033	A	69	6	.	.	.	.	.	.	6	.	6	6
MIS'AUGA- 2414 DIXIE	46041	I	72	1	.	.	.	.	.	.	1	.	.	.
MIS'AUGA- 2365 DIXIE	46045	I	73	1	.	.	.	.	.	.	1	.	.	.
MIS'AUGA- 2360 DIXIE	46046	I	73	1	.	.	.	.	.	.	1	.	.	.
MIS'AUGA- QUEENSWAY	46110	A	78	6	.	.	.	.	.	.	6	.	6	6
ORILLIA- POST OFFICE	47019	A	77	6	.	.	.	.	.	.	.	.	6	6
BARRIE- ARMOURY BLDG	47042	A	82	6	.	.	.	.	.	.	6	.	6	6
STOUFFVILLE- HWY 47	48002	A	80	6	.	.	.	.	.	.	6	.	6	6
KESWICK- BROWN	48140	I	85	W	W	W	W	W	.	W	W	W	.	.
KESWICK- INGHAM	48141	I	85	W	W	W	W	W	.	W	W	W	.	.

TABLE A-3 (CONT.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-89, DAILY DATA

SINGLE DIGITS = CYCLE DURATION IN DAYS TYP = A:AMBIENT SURVEY; I:SOURCE SPECIFIC SURVEY
W = WEEKDAY ONLY S = SEASONAL

STATION NAME	ID	TYP	YR	TSP	Cd	Cr	Cu	Fe	Mn	Ni	Pb	V	NO3	SO4
KESWICK- CALDERARO	48142	I	85	W	W	W	W	W	.	W	W	W	.	.
DORSET- HWY 117	49011	A	87	1	.	.	.	.	.	.	.	.	.	.
PORT HOPE- SHUTER	58027	I	75	S	.	.	.	.	.	.	.	.	S	S
PORT HOPE- MARSH	58041	I	84	S	.	.	.	.	.	.	.	.	S	S
PORT HOPE- QUEEN	58042	I	84	S	.	.	.	.	.	.	.	.	S	S
RED LAKE-YONGE ST.	61015	I	88	6	.	.	.	.	.	.	6	.	.	.
BALMERTOWN- DICKENSON	61016	I	89	6	.	.	.	6	.	.	6	.	.	.
BALMERTOWN- DICKENSON	61017	I	89	6	.	.	.	6	.	.	6	.	.	.
ATIKOKAN- SCHOOL	62004	A	88	6	.	.	.	.	.	.	.	.	.	.
F FRANCES- COLONIZ'N	62032	A	76	6	.	.	.	.	.	.	.	.	.	.
F FRANCES- CHURCH ST	62035	A	74	6	.	.	.	.	.	.	.	.	.	.
THUNDER B- ARCHIBALD	63005	A	70	6	6	6	6	6	6	6	6	6	6	6
THUNDER B- DAWSON	63012	A	70	6	.	.	.	.	.	.	.	.	.	.
THUNDER B- ALGOMA	63022	A	69	6	6	6	6	6	6	6	6	6	6	6
THUNDER B- MONTREAL	63046	I	78	6	.	.	.	.	.	.	.	.	.	.
THUNDER B- WILLIAM	63052	A	80	6	.	.	.	.	.	.	.	.	.	.
THUNDER B- JAMES ST	63200	A	86	6	.	.	.	.	.	.	6	.	6	6
SCHREIBER- KINGSWAY	63400	I	89	6	6	.	6	6	.	.	.	.	.	.
SCHREIBER- MANITOBA	63401	I	89	6	6	.	6	6	.	.	.	.	.	.
S.S.MARIE- BONNEY	71042	I	75	1	1	1	1	1	1	1	1	1	1	1
S.S.MARIE- QUEEN	71049	A	75	6	.	.	6	6	6	6	6	.	6	6
BLIND RIVER- HOSPITAL	71065	A	82	6	.	.	.	.	.	.	.	.	.	.
S.S.MARIE- WN. SCHOOL	71068	A	87	6	.	.	6	6	6	6	6	.	6	6
S.S.MARIE- FIRST AV	71072	I	86	6	.	.	6	6	6	6	6	.	6	6
TIMMINS- MOH BLDG	72077	I	87	6	.	.	.	.	.	.	.	.	.	.
HEARST- LEBLANC	72080	I	87	6	.	.	.	.	.	.	.	.	.	.
NORTH BAY	75010	A	79	6	6	6	6	6	6	6	6	6	6	6
SUDBURY- ASH	77016	A	69	6	6	6	6	6	6	6	6	6	6	6
SUDBURY- LISGAR	77026	A	72	6	6	6	6	6	6	6	6	6	6	6
ESPANOLA- SPRUCE	77029	A	77	6	.	.	.	.	.	.	.	.	.	.
COPPER CLIFF- NICKEL	77070	I	76	6	6	6	6	6	6	6	6	6	6	6
SUDBURY- TRAVERS	77222	A	89	2	.	.	.	.	.	.	.	.	.	.
Provincial Totals				152	55	53	58	63	56	57	84	52	58	58

TABLE A-4 LOCATIONS OF PARTICULATE (DAILY) STATIONS (1989)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-89, DAILY DATA

LOCATION	ID	TYP	YR	LAT	LONG	ELEV (M)
PUC BLDG, 64 WEST ST GODERICH	10015	A	74	43:45	81:43	6
CITY HALL, 444 WINDSOR AV WINDSOR	12002	A	69	42:19	83:02	15
7730 RIVERSIDE DR E WINDSOR	12005	A	78	42:20	82:57	10
BEACH LANE/HWY 18 LA SALLE	12006	A	83	42:14	83:06	4
WRIGHT/WATER ST WINDSOR	12007	A	84	42:17	83:06	4
467 UNIVERSITY AV W WINDSOR	12008	A	70	42:19	83:03	8
9725 RIVERSIDE DR E LITTLE RIVER	12009	A	71	42:20	82:56	2
SEWAGE STN, MANNING RD WINDSOR	12010	A	71	42:20	82:52	1
DROUILLARD RD/RICHMOND ST WINDSOR	12011	A	88	42:19	83:00	1
FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	12013	A	71	42:19	83:00	6
SEWAGE STN, HWY 18/PROSPECT WINDSOR	12015	A	71	42:17	83:05	5
COLLEGE/SOUTH ST WINDSOR	12016	A	75	42:18	83:04	4
1802 GEORGE AV WINDSOR	12036	A	77	42:19	82:59	5
3225 CALIFORNIA ST WINDSOR	12037	A	77	42:16	83:02	4
2885 HOWARD AV WINDSOR	12038	I	77	42:17	83:01	1
DOUGALL/E.C. ROW W WINDSOR	12039	I	78	42:17	83:01	5
DORWIN PLAZA, DOUGALL AV WINDSOR	12047	A	85	42:17	83:02	3
643 ALEXANDRINE WINDSOR	12049	A	85	42:17	83:01	1
604 CAPITOL/REMINGTON WINDSOR	12051	A	86	42:17	83:01	1
415 FRONT ST AMHERSTBURG	12053	A	81	42:08	83:07	14
POST OFFICE, 10 CENTRE ST CHATHAM	13003	A	69	42:24	82:11	12
26 FERGUSON ST THAMESVILLE	13007	I	89	42:55	81:97	1
RR 5 THAMESVILLE	13008	I	89	42:55	81:96	1
GENERAL HOSPITAL, 220 HITTON ST SARNIA	14001	A	62	42:58	82:24	15
HWY40 (OPP LAMBTON GS) COURTRIGHT	14016	A	69	42:48	82:29	4
R.R. #1 (W OF HOUSE) CORUNNA	14030	A	78	42:53	82:17	1
R.R. #1 (W OF BARN) MOORETOWN	14031	A	78	42:52	82:18	1
SARNIA YACHT CLUB, POINT EDWARD SARNIA	14054	A	66	43:00	82:25	5
ST CLAIR BLVD/HWY 40 CORUNNA	14059	A	76	42:53	82:27	4
CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	14064	A	76	42:59	82:24	3
DAVID/FRONT ST SARNIA	14151	A	79	42:59	82:24	4
SARNIA POLICE STATION (ROOF)	14152	I	87	42:59	82:24	5
704 MARA ST. POINT EDWARD- SARNIA	14153	I	87	42:59	82:24	9
WRN FAIR GROUNDS, KING/RECTORY LONDON	15001	A	70	42:59	81:13	4
16 ALEXANDRIA ST ST THOMAS	15006	I	75	42:47	81:11	6
EDGEWARE RD (NNW VARTA PLT) ST THOMAS	15008	I	81	42:48	81:09	2
LONGWOODS CONSERVATION AUTHORITY	15009	A	83	42:53	81:29	2
POND MILLS RD/DEVERON CRES LONDON	15014	A	86	42:58	81:12	4
951 COMMISSIONERS RD E LONDON	15015	A	86	42:58	81:13	4
801 COMMISSIONERS RD E LONDON	15016	A	86	42:57	81:13	4

TABLE A-4 (CONT.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-89, DAILY DATA

LOCATION	ID	TYP	YR	LAT	LONG	ELEV (M)
8 MOUNTSFIELD DR LONDON	15017	A	86	42:58	81:15	4
ST ANTHONY'S SS, HWY 2 BEACHVILLE	17006	I	74	43:05	80:50	6
CYANAMIDE RD BEACHVILLE	17014	I	74	43:08	80:86	1
HWY 2 RR 2 (J SPRIEL PROP) INGERSOLL	17020	I	81	43:04	80:51	2
OXFORD CTY RD 6 (HESSTON FARM) EMBRO	17021	I	83	43:06	80:52	1
JARVIS COMMUNITY CENTRE,JAMES ST JARVIS	22087	A	80	42:53	80:07	4
ST GEORGE/ALMA PORT DOVER	22090	A	83	42:47	80:13	5
RAINHAM RD/SANDUSK RD JARVIS	22092	I	85	42:49	80:02	4
WALPOLE S PS, SANDUSK RD NANTICOKE	22904	I	84	42:50	80:02	4
RAINHAM RD (NEAR STELCO GATE) NANTICOKE	22907	I	84	42:49	80:05	4
NANTICOKE RD/WALPOLE CON 2 NANTICOKE	22961	I	79	42:49	80:04	3
N 2 KM NANTICOKE GS NANTICOKE	22964	I	84	42:50	80:05	4
EDNA/FREDERICK STS KITCHENER	26029	A	76	43:27	80:28	5
MONO-MULMAR SCHOOL, HWY89/VIOLET HILL	26048	I	87	44:06	80:06	5
71 KING ST ST CATHARINES	27008	A	87	43:10	79:15	12
337 ALBERTA/DEVON ST WELLAND	27045	I	78	42:58	79:15	1
DAVIS/FRAZER PORT COLBORNE	27047	I	79	42:53	79:15	3
4057 VICTORIA AV NIAGARA FALLS	27050	I	79	43:07	79:04	4
HOLY T CHURCH, NORTON/PORTAGE CHIPPAWA	27051	I	79	43:04	79:04	16
185 QUEEN ST S THOROLD	27052	I	82	43:07	79:12	1
STP GROUNDS, STANLEY AV NIAGARA FALLS	27055	I	82	43:08	79:05	4
ALLENDALE AV NIAGARA FALLS	27056	A	83	43:05	79:05	5
HANLON EXPWY/SPEED RIVER GUELPH	28027	I	81	43:31	80:16	6
EXHIBITION ST/CLARK ST GUELPH	28028	A	86	43:33	80:16	4
545 ST GEORGE ST FERGUS	28040	I	89	43:70	80:38	4
NICHOLS RD/GARAFRAXA ST W FERGUS	28041	I	89	43:70	80:39	1
ELGIN/KELLY HAMILTON	29000	A	88	43:15	79:52	4
KENILWORTH HAMILTON	29009	A	69	43:15	79:49	6
BURLINGTON/LEEDS HAMILTON	29011	I	73	43:16	79:49	5
BURLINGTON/WELLINGTON HAMILTON	29012	A	69	43:16	79:51	7
CHATHAM/FRID HAMILTON	29017	A	69	43:15	79:54	5
BARTON/WENTWORTH HAMILTON	29025	I	69	43:16	79:51	4
450 HUGHSON ST N HAMILTON	29067	A	73	43:16	79:52	5
405 CUMBERLAND AV HAMILTON	29087	A	79	43:15	79:50	4
BARTON/NASH RD HAMILTON	29089	A	80	43:14	79:46	6
BAY/MAIN ST HAMILTON	29098	A	83	43:15	79:53	23
467 BEACH BLVD HAMILTON	29102	A	85	43:17	79:47	4
OFIELD RD/HWY 5 GREENSVILLE	29111	I	86	43:18	79:59	1
HARVEST RD/WESITE GREENSVILLE	29112	I	87	43:17	79:59	1
GERTRUDE/DEPEW HAMILTON	29113	A	86	43:15	79:49	4

TABLE A-4 (CONT.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-89, DAILY DATA

LOCATION	ID	TYP	YR	LAT	LONG	ELEV (M)
VICKERS RD/EAST 18TH ST HAMILTON	29114	A	85	43:14	79:52	3
MAIN ST/W HWY 403 HAMILTON	29118	A	85	43:15	79:54	3
MORLEY ST/PARKDALE AV HAMILTON	29119	A	86	43:15	79:47	4
DUNDURN/YORK HAMILTON	29122	A	87	43:16	79:53	10
BUCHANN PARK SCHOOL, LAURIER AVE (ROOF) H	29124	A	88	43:14	79:53	4
EWEN RD/WHITNEY AV HAMILTON	29130	A	87	43:15	79:56	1
ALBRIGHT RD/MT ALBION RD HAMILTON	29135	A	87	43:13	79:48	8
BRUCE PS, 51 LARCHMOUNT AV TORONTO	31045	I	86	43:40	79:20	6
MOSLEY/LESLIE STS TORONTO	31058	I	73	43:40	79:20	5
A.R.CLARKE CO. 633 EASTERN AVE. TORONTO	31065	I	87	43:40	79:20	12
WORKS DEPT, 138 HAMILTON AV TORONTO	31082	I	74	43:40	79:21	5
TECUMSETH/NIAGARA ST TORONTO	31085	I	79	43:38	79:24	5
26 BREADALBANE TORONTO	31104	A	81	43:40	79:23	15
PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	31120	A	81	43:39	79:27	9
60 BATHURST ST TORONTO	31181	I	83	43:39	79:24	6
FORT YORK, TORONTO	31183	I	87	43:38	79:24	3
LEASIDE HYDRO STATION EAST YORK	32010	A	87	43:42	79:21	1
LAWRENCE/KENNEDY SCARBORO	33003	A	70	43:45	79:16	4
HENDON AVE (YONGE ST/FINCH AVE) NORTH YORK	34020	A	87	43:47	79:25	5
35 EDGAR AVE NORTH YORK	34025	A	87	43:43	79:32	5
ELMCREST RD (CENTENNIAL PK) ETOBICOKE	35003	A	69	43:39	79:35	4
EVANS/ARNOLD AV ETOBICOKE	35033	A	69	43:37	79:31	3
RESOURCES RD (MOL LAB) ETOBICOKE	35051	A	80	43:43	79:33	11
CLEARVIEW HEIGHTS YORK	36030	A	87	43:42	79:29	5
2487 LAKESHORE RD. E OAKVILLE	44005	I	86	43:29	79:38	10
HWY 2/NORTH SHORE BLVD E BURLINGTON	44008	A	79	43:19	79:48	17
BRONTE RD/WOBURN CRES OAKVILLE	44015	I	80	43:24	79:44	5
FIRE HALL, BAYLY/BROCK PICKERING	45001	I	70	43:50	79:04	1
AJAX-PICKERING HOSP AJAX	45007	I	75	43:50	79:01	15
PS, RITSON RD/OLIVE AV OSHAWA	45025	A	79	43:53	78:51	5
FIRE HALL, BRAMALEA RD BRAMALEA	46033	A	69	43:42	79:42	3
2414 DIXIE RD MISSISSAUGA	46041	I	72	43:36	79:35	5
2365 DIXIE RD MISSISSAUGA	46045	I	73	43:36	79:35	5
2360 DIXIE RD MISSISSAUGA	46046	I	73	43:36	79:35	12
QUEENSWAY W/HURONTARIO ST MISSISSAUGA	46110	A	78	43:34	79:37	5
POST OFFICE ORILLIA	47019	A	77	41:61	79:42	10
ARMOURY BLDG, PARK/PARKSIDE ST BARRIE	47042	A	82	44:23	79:42	12
HWY47/E OF HWY48 STOUFFVILLE	48002	A	80	43:58	79:16	5
CON 5 (BROWN PROP) KESWICK	48140	I	85	44:13	79:25	1
RR2 (INGHAM PROP) KESWICK	48141	I	85	44:13	79:25	1

TABLE A-4 (CONT.)

ONTARIO AIR MONITORING NETWORK AS OF 31-DEC-89, DAILY DATA

LOCATION	ID	TYP	YR	LAT	LONG	ELEV (M)
RR2 (CALDERARO PROP) KESWICK	48042	I	85	44:13	79:26	1
HWY117 PAINT LAKE ROAD DORSET	49011	A	87	45:13	78:56	1
51 SHUTER ST PORT HOPE	58027	I	75	43:57	78:17	4
FILT PLT, MARSH ST PORT HOPE	58041	I	84	43:57	78:18	1
CAN TIRE, QUEEN ST PORT HOPE	58042	I	84	43:57	78:18	1
18 YOUNG STREET- RED LAKE	61015	I	88	51:06	81:49	1
98 DICKENSON RD BALMERTOWN	61016	I	89	51:05	87:74	1
DICKENSON MINES LTD BALMERTOWN	61017	I	89	51:06	87:73	1
ATIKOKAN S.S. ATIKOKAN	62004	A	88	48:46	91:34	4
CEMETERY,COLONIZATION RD W FORT FRANCES	62032	A	76	48:37	93:25	5
250 CHURCH ST FORT FRANCES	62035	A	74	48:36	93:23	9
HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	63005	A	70	48:23	89:15	9
DAWSON CT/ALGOMA ST N THUNDER BAY	63012	A	70	48:27	89:12	9
HOSPITAL, 35 ALGOMA ST N THUNDER BAY	63022	A	69	48:26	89:13	22
CAN-CAR, MONTREAL ST THUNDER BAY	63046	I	78	48:21	89:18	3
TRNSIT MAINT BD, WILLIAM RD THUNDER BAY	63052	A	80	48:25	89:14	9
MTC 615 JAMES ST S THUNDER BAY	63200	A	86	48:23	89:17	3
5 KINGSWAY ST SCHREIBER	63400	I	89	48:81	87:26	2
101 MANITOBA ST SCHREIBER	63401	I	89	48:80	87:27	2
PUMPHOUSE, BONNEY ST SAULT STE MARIE	71042	I	75	46:31	84:23	1
LAND OFFICE, QUEEN ST SAULT STE MARIE	71049	A	75	46:31	84:20	6
HOSPITAL, LAKESHORE AV BLIND RIVER	71065	A	82	46:11	82:58	12
WM. MERRIFIELD SCHOOL SAULT STE MARIE	71068	A	87	46:32	84:21	3
FIRST AV/SECOND LINE SAULT STE MARIE	71072	I	86	46:32	84:22	2
MINISTRY OF HEALTH BLDG TIMMINS	72077	I	84	48:28	81:20	5
CUSTOM SAWMILL RD (LEBLANC PROP) HEARST	72080	I	87	49:41	83:39	5
OPP STN NORTH BAY	75010	A	79	46:19	79:27	4
WATER TANK, ASH ST SUDBURY	77016	A	69	46:30	81:00	3
19 LISGAR ST SUDBURY	77026	A	72	46:30	81:00	14
POST OFFICE, SPRUCE/BARBER ST ESPANOLA	77029	A	77	46:16	81:46	6
PUMPHOUSE, NICKEL ST COPPER CLIFF	77070	I	76	46:28	81:04	5
TRAVERS ST SUDBURY	77222	A	89	46:49	81:02	2

TABLE A-5 METEOROLOGICAL NETWORK (1989)

ONTARIO METEOROLOGICAL NETWORK AS OF 31-DEC-89, HOURLY DATA

YR - YEAR MONITORING BEGAN T - TELEMETRY

STATION NAME	ID	YR	LAT	LONG	WS1	HT1	WS2	HT2	WS3	HT3	TEM	DT1	DT2
WINDSOR- WRIGHT	12007	84	42:17	82:16	T	10	T	40	.	.	T	T	.
MERLIN	13021	77	42:15	82:13	T	9	.	.	.	.	.	.	.
COURTRIGHT- HWY 40	14016	69	42:48	82:29	T	10	T	30	T	90	T	T	T
PARKHILL	15013	83	43:10	81:41	T	10	.	.	.	.	.	.	.
TIVERTON- CON RD 2	18013	79	44:18	81:35	T	10	T	30	T	100	T	T	T
JARVIS	22883	84	42:54	80:05	T	10	.	.	T	85	T	.	T
LONG POINT	22901	79	42:35	80:23	T	10	.	.	T	85	T	.	.
ORANGEVILLE	26048	89	44:06	80:06	T	10	.	.	.	.	.	.	.
ALLANBURG	27011	81	43:04	79:11	T	10	T	37	.	.	T	T	.
HAMILTON- WOODWARD	29026	69	43:15	79:46	T	10	T	30	T	91	T	T	T
TORONTO- ISLAND *	31025	75	43:38	79:23	T	10	.	.	.	.	.	.	.
TORONTO- BRUCE PS	31045	75	43:39	79:25	T	21	.	.	.	.	.	.	.
TORONTO- JUNCTION	31120	82	43:40	79:27	T	18	.	.	.	.	.	.	.
SCARBORO- LAWRENCE	33003	70	43:45	79:16	T	12	.	.	T	76	T	.	T
ETOBICOKE- EVANS	35033	67	43:37	79:31	T	10	T	30	T	91	T	T	T
OAKVILLE	44015	80	43:24	79:44	T	10	.	.	.	.	.	.	.
OSHAWA	45025	79	43:53	78:51	T	10	.	.	.	.	.	.	.
STOUFFVILLE	48002	74	43:58	79:16	T	10	.	.	.	.	.	.	.
CORNWALL- 861 W. 2ND	56065	79	45:01	74:44	T	9	.	.	.	.	.	.	.
PORT HOPE	58031	79	43:56	78:18	T	10	.	.	.	.	.	.	.
DRYDEN	61027	84	49:47	92:50	T	18	.	.	.	.	.	.	.
F FRANCES- COLONIZ'N	62032	76	48:37	93:25	T	10	.	.	.	.	.	.	.
MARATHON- PENINSULA	63034	82	48:43	86:23	T	12	.	.	.	.	.	.	.
RED ROCK	63084	81	48:57	88:15	T	12	.	.	.	.	.	.	.
TERRACE BAY	63090	81	48:47	89:19	T	12	.	.	.	.	.	.	.
SCHREIBER	63402	89	48:80	87:27	T	12	.	.	.	.	.	.	.
ELLIOT LAKE	71060	83	46:25	88:40	T	15	.	.	.	.	T	.	.
S.S.MARIE- WM. S	71068	87	46:32	84:21	T	10	.	.	.	.	T	.	.
HOYLE/TIMMINS	72089	87	48:33	81:04	T	10	.	.	.	.	T	.	.
NORTH BAY	75010	79	46:19	79:27	T	10	.	.	.	.	T	.	.
HANMER	77013	73	46:39	80:57	T	10	.	.	.	.	T	.	.
SUDBURY- CKNC	77025	82	46:30	81:00	T	10	.	.	T	115	T	.	T

* ENVIRONMENT CANADA SITE

WS1 - WIND SPEED AND DIRECTION BELOW 23 M
WS2 - WIND SPEED AND DIRECTION 23 M TO 76 M
WS3 - WIND SPEED AND DIRECTION ABOVE 76 M
TEM - AMBIENT TEMPERATURE
DT1 - TEMPERATURE DIFFERENCE LEVEL 2 MINUS LEVEL 1
DT2 - TEMPERATURE DIFFERENCE LEVEL 3 MINUS LEVEL 1
HT1 - SENSOR HEIGHT (METRES) LEVEL 1
HT2 - SENSOR HEIGHT (METRES) LEVEL 2
HT3 - SENSOR HEIGHT (METRES) LEVEL 3

TABLE A-6 SULPHUR DIOXIDE (SO_2) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - SULPHUR DIOXIDE UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR	24HR	1YR
12007	WRIGHT/WATER ST WINDSOR	342	.000	.000	.000	.005	.014	.030	.007	0.14	0.03	0	0	0
12008	467 UNIVERSITY AV W WINDSOR	352	.000	.000	.002	.007	.017	.039	.008	0.11	0.04	0	0	0
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	360	.000	.000	.000	.003	.010	.029	.005	0.09	0.02	0	0	0
12016	COLLEGE/SOUTH ST WINDSOR	365	.000	.000	.003	.008	.017	.036	.009	0.11	0.03	0	0	0
12046	HALDEN RD (S LAURIER DR) WINDSOR	347	.000	.000	.000	.003	.009	.030	.005	0.08	0.03	0	0	0
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	356	.000	.000	.000	.000	.009	.068	.005	0.33	0.06	1	0	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	357	.000	.000	.000	.001	.017	.096	.008	0.24	0.06	0	0	0
15001	MRN FAIR GROUNDS, KING/RECTORY LONDON	322	.000	.000	.000	.005	.012	.028	.006	0.06	0.03	0	0	0
15015	951 COMMISSIONERS RD E LONDON	181	.000	.000	.000	.000	.000	.011	.001	0.09	0.01	0	0	INS
15016	801 COMMISSIONERS RD E LONDON	181	.000	.000	.000	.000	.006	.023	.002	0.08	0.03	0	0	INS
15017	8 MOUNTSFIELD DR LONDON	152	.000	.000	.000	.000	.000	.011	.001	0.05	0.01	0	0	INS
18007	CONCESSION RD 2 LOT A TIVERTON	344	.000	.000	.000	.000	.005	.020	.002	0.08	0.03	0	0	0
22071	EXPERIMENTAL FARM SIMCOE	354	.000	.000	.000	.003	.009	.026	.005	0.14	0.02	0	0	0
22086	CHEAPSIDE RD(3 KM S OF HWY 3) NANTICOKE	351	.000	.000	.000	.004	.014	.049	.007	0.25	0.05	0	0	0
22094	TOWNLINE RD/CON 13 TOWNSEND	358	.000	.000	.000	.000	.008	.022	.003	0.17	0.02	0	0	0

TABLE A-6 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - SULPHUR DIOXIDE UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR	24HR	1YR
22901	PROVINCIAL PARK LONG POINT	364	.000	.000	.000	.000	.008	.027	.004	0.16	0.03	0	0	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	357	.000	.000	.000	.004	.013	.051	.007	0.16	0.04	0	0	0
26029	EDNA/FREDERICK STS KITCHENER	365	.000	.000	.000	.000	.006	.018	.003	0.05	0.02	0	0	0
26045	WEBER/UNIVERSITY ST WATERLOO	357	.000	.000	.000	.004	.009	.019	.005	0.05	0.02	0	0	0
27051	HOLY T CHURCH, NORTON/PORTAGE CHIPPAWA	156	.000	.000	.000	.000	.008	.026	.003	0.07	0.02	0	0	INS
27052	185 QUEEN ST S THOROLD	365	.000	.000	.005	.012	.046	.162	.020	0.38	0.13	6	3	0
27055	STP GROUNDS, STANLEY AV NIAGARA FALLS	360	.000	.000	.000	.005	.016	.044	.007	0.11	0.06	0	0	0
27056	ALLENDALE AV NIAGARA FALLS	365	.000	.000	.000	.004	.009	.026	.005	0.08	0.02	0	0	0
27067	ARGYLE CRES (PUMP STN) ST CATHARINES	363	.000	.000	.000	.004	.010	.027	.006	0.10	0.03	0	0	0
28028	EXHIBITION ST/CLARK ST GUELPH	359	.000	.000	.000	.002	.008	.019	.004	0.07	0.02	0	0	0
29000	ELGIN/KELLY ST HAMILTON	364	.000	.000	.003	.008	.019	.055	.010	0.21	0.06	0	0	0
29025	BARTON/WENTWORTH HAMILTON	363	.000	.000	.004	.008	.022	.053	.012	0.15	0.04	0	0	0
29102	467 BEACH BLVD HAMILTON	346	.000	.000	.005	.011	.030	.066	.014	0.13	0.06	0	0	0
29105	NASH RD/KENTLEY DR HAMILTON	365	.000	.000	.000	.004	.010	.030	.006	0.15	0.02	0	0	0
29114	VICKERS RD/EAST 18TH ST HAMILTON	365	.000	.000	.002	.007	.018	.040	.009	0.14	0.03	0	0	0

TABLE A-6 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - SULPHUR DIOXIDE UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR	24HR	1YR
29118	MAIN ST W/HWY403 HAMILTON	365	.000	.000	.000	.003	.010	.028	.005	0.20	0.03	0	0	0
31104	26 BREADALBANE TORONTO	362	.000	.000	.001	.006	.014	.036	.008	0.12	0.03	0	0	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	363	.000	.000	.003	.007	.014	.033	.009	0.11	0.04	0	0	0
31190	CN TOWER, 301 FRONT ST W TORONTO	334	.000	.000	.000	.001	.016	.067	.007	0.37	0.07	3	0	0
32010	LEASIDE HYDRO STATION EAST YORK	337	.000	.000	.000	.003	.009	.033	.005	0.15	0.03	0	0	0
33003	LAWRENCE/KENNEDY SCARBORO	361	.000	.000	.000	.003	.010	.036	.006	0.14	0.03	0	0	0
33019	REDLAND CR (SCARB BLUFFS) SCARBORO	365	.000	.000	.000	.000	.001	.016	.001	0.08	0.02	0	0	0
34002	SC CTR, 770 DON MILLS RD NORTH YORK	365	.000	.000	.000	.000	.005	.019	.002	0.12	0.02	0	0	0
34020	HENDON AVE (YONGE/FINCH) NORTH YORK	365	.000	.000	.000	.004	.009	.034	.006	0.13	0.03	0	0	0
34025	35 EDGAR AVE NORTH YORK WEST	355	.000	.000	.000	.003	.010	.046	.006	0.21	0.04	0	0	0
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	346	.000	.000	.000	.000	.009	.039	.005	0.24	0.03	0	0	0
35005	QUEENSWAY HOSPITAL ETOBICOKE	365	.000	.000	.000	.003	.009	.026	.005	0.18	0.03	0	0	0
35033	EVANS/ARNOLD AV ETOBICOKE	365	.000	.001	.004	.008	.016	.029	.010	0.09	0.03	0	0	0
35050	125 RESOURCES RD (MOE LAB) ETOBICOKE	196	.000	.000	.000	.000	.006	.018	.002	0.15	0.02	0	0	INS
36030	CLEARVIEW HTGS/KEELE ST YORK	351	.000	.000	.003	.007	.015	.042	.009	0.22	0.03	0	0	0

TABLE A-6 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - SULPHUR DIOXIDE UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR	24HR	1YR
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	362	.000	.000	.001	.006	.010	.026	.007	0.10	0.02	0	0	0
44015	BRONTE RD/WOBURN CRES OAKVILLE	365	.000	.000	.000	.004	.012	.035	.006	0.10	0.03	0	0	0
45025	PS, RITSON RD/OLIVE AV OSHAWA	365	.000	.000	.000	.004	.009	.024	.006	0.06	0.02	0	0	0
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	363	.000	.000	.000	.000	.008	.036	.004	0.23	0.04	0	0	0
46117	MEADOW PK, APPLE LANE CLUB MISSISSAUGA	365	.000	.000	.000	.005	.011	.031	.007	0.11	0.04	0	0	0
47042	ARMOURY BLDG, PARK/PARKSIDE ST BARRIE	347	.000	.000	.000	.000	.000	.016	.001	0.09	0.02	0	0	0
48002	HWY47/E OF HWY48 STOUFFVILLE	365	.000	.000	.000	.000	.008	.021	.004	0.09	0.03	0	0	0
49010	HWY 117/PAINT LAKE RD DORSET	159	.000	.000	.000	.000	.005	.019	.002	0.14	0.01	0	0	INS
51001	MCD GDS, RIDEAU/MURTEMBURG ST OTTAWA	359	.000	.000	.000	.000	.007	.019	.003	0.11	0.03	0	0	0
56051	MEMORIAL PK, BEDFORD/THIRD STS CORNWALL	363	.000	.000	.000	.000	.018	.071	.007	0.52	0.06	1	0	0
59006	CITY HALL, 500 GEORGE ST PETERBORO	359	.000	.000	.000	.000	.004	.017	.002	0.08	0.02	0	0	0
61014	SEWAGE TREATMENT PLT BALMERTOWN	334	.000	.000	.000	.000	.000	.245	.009	0.56	0.23	75	3	0
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	356	.000	.000	.000	.000	.000	.000	.000	0.02	0.00	0	0	0
63200	MTC 615 JAMES ST S THUNDER BAY	365	.000	.000	.000	.000	.000	.008	.000	0.03	0.01	0	0	0
71068	MN. MERRIFIELD SCHOOL SAULT STE MARIE	336	.000	.000	.000	.000	.006	.034	.003	0.11	0.03	0	0	0

TABLE A-6 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - SULPHUR DIOXIDE UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR	24HR	1YR
71070	WAWA MOTOR INN WAWA	360	.000	.000	.000	.000	.004	.163	.006	0.72	0.15	45	2	0
72089	RR 1 LOT 11 CONC 1 MATHESON TWP HOYLE	364	.000	.000	.000	.000	.009	.143	.007	0.44	0.08	13	0	0
75010	OPP STN NORTH BAY	359	.000	.000	.000	.000	.005	.020	.002	0.07	0.02	0	0	0
77012	SKEAD SUDBURY	365	.000	.000	.000	.000	.018	.163	.010	0.58	0.10	36	0	0
77013	HANMER SUDBURY	365	.000	.000	.000	.000	.008	.104	.006	0.49	0.07	17	0	0
77016	WATER TANK, ASH ST SUDBURY	357	.000	.000	.000	.000	.019	.114	.009	0.57	0.07	16	0	0
77028	GOVERNMENT RD/EDWARD ST CONISTON	363	.000	.000	.000	.000	.001	.028	.002	0.09	0.03	0	0	0
77065	FALCONBRIDGE RD GARSON	364	.000	.000	.000	.000	.011	.127	.007	0.46	0.07	17	0	0
77075	KENNEDY ST NEW SUDBURY	361	.000	.000	.000	.000	.015	.125	.008	0.68	0.09	21	0	0
77096	LONG LAKE RD (VILLA LOYOLA) SUDBURY	365	.000	.000	.000	.000	.010	.143	.008	1.17	0.14	36	2	0
77201	MIKKOLA (J. HAMILTON SCHOOL) SUDBURY	363	.000	.000	.000	.000	.009	.134	.007	1.34	0.17	37	4	0
77203	SCIENCE NORTH SUDBURY	365	.000	.000	.000	.000	.013	.108	.008	1.11	0.07	18	0	0
77206	ST LAURENT/REGIONAL RD RAYSIDE	363	.000	.000	.000	.000	.005	.061	.004	0.43	0.04	6	0	0
77218	LOT 2-PLAN M-1025 COPPER CLIFF	360	.000	.000	.000	.002	.041	.320	.020	0.95	0.20	143	14	0
77220	GATCHELL SUDBURY	362	.000	.000	.000	.003	.017	.133	.010	0.76	0.11	23	1	0

TABLE A-7 10-YEAR TREND FOR SO_2

City	Annual Mean (ppm)									
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
BURLINGTON	.005	.007	.005	.005	.005	.004	.004	.004	.004	.007
CORNWALL	.012	.010	.010	.008	.009	.009	.008	.006	.006	.007
ETOBICOKE	.008	.008	.006	.006	.007	.007	.005	.005	.006	.005
HAMILTON	.013	.010	.014	.014	.015	.009	.008	.007	.008	.010
KITCHENER	.005	.003	.003	.002	.003	.002	.003	.004	.003	.003
LONDON	.005	.009	.004	.003	.004	.002	.003	.003	.004	.006
LONG POINT	.006	.004	.003	.002	.002	.002	.002	.002	.002	.003
MISSISSAUGA	.005	.006	.006	.006	.006	.006	.007	.009	.004	.004
NIAGARA FALLS	.007	.004	.003	.003	.004	.003	.003	.002	.005	.005
NORTH BAY	.004	.002	.003	.002	.003	.002	.002	.002	.002	.002
NORTH YORK	.010	.010	.012	.006	.009	.008	.005	.002	.002	.002
OAKVILLE	.007	.005	.007	.005	.007	.006	.005	.003	.005	.006
OSHAWA	.007	.004	.004	.003	.005	.003	.003	.004	.006	.006
OTTAWA	.004	.005	.004	.002	.002	.002	.002	.001	.002	.003
PETERBOROUGH	.004	.003	.003	.002	.003	.002	.002	.002	.002	.002
SARNIA	.013	.014	.012	.010	.009	.011	.008	.007	.009	.008
SCARBOROUGH	.008	.007	.004	.003	.004	.003	.003	.004	.008	.006
SIMCOE	.007	.004	.004	.003	.004	.005	.003	.003	.005	.005
ST CATHARINES	.004	.007	.005	.005	.005	.006	.005	.010	.011	.006
STOUFFVILLE	.003	.003	.003	.005	.005	.004	.002	.002	.003	.004
SUDBURY	.016	.010	.010	.009	.010	.010	.008	.009	.010	.008
THUNDER BAY	.001	.001	.000	.000	.000	.000	.000	.000	.000	.000
TIVERTON	.003	.003	.001	.003	.007	.002	.001	.001	.003	.002
TORONTO	.007	.008	.006	.004	.006	.004	.004	.004	.007	.008
WINDSOR	.011	.012	.009	.008	.007	.007	.008	.008	.011	.008

TABLE A-8 SUSPENDED PARTICLES (SP) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - SOILING INDEX UNIT = COHS/1000 FT

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 24HR	1YR
12008	467 UNIVERSITY AV W WINDSOR	346	0.06	0.17	0.27	0.41	0.73	1.58	0.40	3.5	1.5	6	0
12016	COLLEGE/SOUTH ST WINDSOR	363	0.06	0.16	0.25	0.38	0.69	1.87	0.40	4.8	2.1	8	0
12038	2885 HOWARD AV WINDSOR	65	0.06	0.19	0.29	0.43	0.74	1.57	0.42	3.8	1.2	1	INS
12039	DOUGLAS ST/E.C. ROW W WINDSOR	42	0.09	0.20	0.33	0.47	0.83	2.24	0.48	4.3	1.4	1	INS
12049	643 ALEXANDRINE WINDSOR	71	0.02	0.11	0.18	0.27	0.50	1.17	0.29	2.6	0.7	0	INS
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	347	0.01	0.09	0.19	0.31	0.57	1.17	0.30	3.6	1.4	3	0
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	349	0.03	0.11	0.21	0.34	0.59	1.41	0.33	4.6	1.8	5	0
15009	LONGWOODS CONSERVATION LONGWOODS	354	0.00	0.01	0.06	0.11	0.24	0.51	0.13	1.9	0.5	0	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	322	0.01	0.08	0.15	0.25	0.45	0.82	0.25	2.4	0.8	0	0
26045	WEBER/UNIVERSITY ST WATERLOO	338	0.00	0.07	0.14	0.23	0.40	0.89	0.23	1.9	1.0	0	0
26048	MONO-MULAR SCHOOL HWY89/VIOLET HILL	126	0.00	0.02	0.10	0.23	0.49	0.89	0.22	1.9	0.8	0	INS
27052	185 QUEEN ST S THOROLD	357	0.10	0.17	0.25	0.33	0.51	0.88	0.33	1.8	0.9	0	0
27055	STP GROUNDS, STANLEY AV NIAGARA FALLS	348	0.04	0.16	0.27	0.41	0.69	1.29	0.38	3.0	1.1	1	0
27056	ALLENDALE AV NIAGARA FALLS	345	0.02	0.08	0.16	0.25	0.43	0.87	0.25	2.2	0.9	0	0
27067	ARGYLE CRES (PUMP STN) ST CATHARINES	355	0.01	0.09	0.16	0.25	0.45	0.95	0.25	1.8	0.9	0	0

TABLE A-8 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - SOILING INDEX UNIT = COHS/1000 FT

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 24HR	1YR
28028	EXHIBITION ST/CLARK ST GUELPH	349	0.00	0.05	0.12	0.20	0.37	0.87	0.21	2.6	1.0	0	0
29000	ELGIN/KELLY ST HAMILTON	360	0.09	0.21	0.34	0.53	0.98	1.93	0.50	3.9	1.8	23	0
29001	HUGHSON/HUNTER HAMILTON	359	0.04	0.18	0.31	0.48	0.87	1.73	0.45	4.3	1.6	15	0
29025	BARTON/WENTWORTH HAMILTON	355	0.07	0.19	0.32	0.49	0.85	1.59	0.45	3.2	1.5	10	0
29102	467 BEACH BLVD HAMILTON	274	0.06	0.23	0.44	0.69	1.10	1.97	0.58	3.8	1.8	20	1
29105	NASH RD/KENTLEY DR HAMILTON	364	0.03	0.12	0.19	0.30	0.56	1.27	0.31	3.1	1.1	1	0
29114	VICKERS RD/EAST 18TH ST HAMILTON	361	0.02	0.11	0.18	0.29	0.54	1.19	0.29	2.0	0.9	0	0
29118	MAIN ST W/HWY403 HAMILTON	360	0.03	0.13	0.23	0.39	0.77	1.54	0.38	2.5	1.4	3	0
31049	MISSION, 381 YONGE ST TORONTO	348	0.15	0.35	0.54	0.80	1.35	2.40	0.72	4.7	2.4	53	1
31104	26 BREADALBANE TORONTO	356	0.05	0.16	0.25	0.38	0.67	1.31	0.37	3.2	1.5	7	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	364	0.04	0.16	0.26	0.39	0.74	1.78	0.40	4.7	2.1	8	0
31190	CN TOWER, 301 FRONT ST W TORONTO	354	0.00	0.00	0.05	0.12	0.26	0.63	0.13	1.4	0.5	0	0
32010	LEASIDE HYDRO STATION EAST YORK	361	0.02	0.13	0.23	0.39	0.84	1.89	0.40	4.1	2.1	13	0
33003	LAWRENCE/KENNEDY SCARBORO	360	0.04	0.17	0.28	0.44	0.79	1.60	0.42	3.9	1.8	7	0
34020	HENDON AVE (YONGE/FINCH) NORTH YORK	348	0.00	0.11	0.23	0.39	0.77	1.44	0.37	4.4	1.4	6	0

TABLE A-8 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - SOILING INDEX UNIT = COHS/1000 FT

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 24HR	1YR
34025	35 EDGAR AVE NORTH YORK WEST	335	0.00	0.12	0.27	0.50	0.95	1.71	0.44	3.3	1.5	12	0
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	329	0.00	0.09	0.19	0.32	0.63	1.60	0.32	2.9	1.5	7	0
35033	EVANS/ARNOLD AV ETOBICOKE	357	0.10	0.25	0.42	0.65	1.12	2.38	0.59	4.9	2.4	32	1
36030	CLEARVIEW HTGS/KEELE ST YORK	345	0.05	0.17	0.28	0.44	0.85	2.26	0.45	4.9	2.5	12	0
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	349	0.02	0.13	0.25	0.42	0.86	1.83	0.41	3.9	1.7	16	0
44015	BRONTE RD/WOBURN CRES OAKVILLE	365	0.00	0.08	0.19	0.36	0.81	1.89	0.36	3.9	1.5	12	0
45025	PS, RITSON RD/OLIVE AV OSHAWA	357	0.00	0.11	0.22	0.39	0.77	1.55	0.37	3.7	1.9	4	0
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	363	0.02	0.11	0.21	0.35	0.71	1.97	0.37	4.1	2.0	8	0
51001	MCD GDS, RIDEAU/MURTEMBURG ST OTTAWA	334	0.01	0.11	0.22	0.38	0.72	1.46	0.35	3.9	1.5	3	0
56051	MEMORIAL PK, BEDFORD/THIRD STS CORNWALL	361	0.00	0.00	0.01	0.07	0.25	0.77	0.11	2.3	0.8	0	0
71068	MN. MERRIFIELD SCHOOL SAULT STE MARIE	346	0.00	0.09	0.20	0.35	0.69	1.71	0.34	3.2	1.3	4	0
75010	OPP STN NORTH BAY	353	0.00	0.05	0.13	0.24	0.59	1.41	0.27	3.0	1.2	2	0
77203	SCIENCE NORTH SUDBURY	351	0.00	0.04	0.08	0.16	0.33	0.89	0.18	1.9	1.3	1	0

TABLE A-9 10-YEAR TREND FOR SP

Annual Mean (COH/1000 ft.)

City	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
CORNWALL	.18	.10	.16	.18	.16	.09	.06	.04	.10	.11
ETOBICOKE	.42	.31	.49	.37	.52	.47	.54	.52	.43	.32
HAMILTON	.54	.58	.57	.44	.55	.52	.57	.55	.46	.50
LONDON	.33	.30	.32	.31	.29	.30	.30	.27	.25	.33
NIAGARA FALLS	.22	.25	.22	.20	.22	.20	.18	.20	.32	.25
NORTH YORK	.48	.54	.60	.57	.62	.56	-	-	.34	.41
OSHAWA	.31	.31	.41	.33	.40	.37	.33	.37	.31	.37
OTTAWA	.14	.18	.18	.18	.19	.14	.15	.19	.23	.36
SARNIA	.27	.28	.27	.27	.29	.25	.31	.29	.24	.30
SCARBOROUGH	.35	.40	.37	.32	.36	.34	.34	.38	.37	.42
SUDBURY	.13	.12	.12	.12	.15	.13	.16	.16	.21	.18
ST CATHARINES	.31	.32	.29	.27	.24	.26	.24	.27	.23	.25
TORONTO	.34	.45	.46	.41	.47	.36	.39	.38	.34	.37
WINDSOR	.42	.41	.43	.47	.46	.41	.43	.37	.44	.40

TABLE A-10 TOTAL REDUCED SULPHUR (TRS) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - TOTAL REDUCED SULPHUR UNIT = PARTS/BILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	EXCEEDANCES OF PULP MILL CRIT 1 HR
12007	WRIGHT/WATER ST WINDSOR	343	0.0	0.0	0.2	0.8	3.2	18.5	1.7	80	16	35
12016	COLLEGE/SOUTH ST WINDSOR	362	0.0	0.0	0.3	0.8	2.0	7.7	1.2	29	6	1
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	356	0.0	0.0	0.1	0.6	1.5	3.2	0.8	8	4	0
18007	CONCESSION RD 2 LOT A TIVERTON	301	0.0	0.0	0.0	0.3	0.8	1.7	0.4	6	2	0
22086	CHEAPSIDE RD(3 KM S OF HWY 3) NANTICOKE	343	0.0	0.0	0.0	0.5	1.0	3.1	0.6	15	3	0
22904	WALPOLE S PS, SANDUSK RD NANTICOKE	360	0.0	0.0	0.1	0.6	1.0	4.4	0.7	12	3	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	357	0.0	0.0	0.0	0.5	2.6	10.7	1.1	141	16	6
27052	185 QUEEN ST S THOROLD	347	0.0	0.0	0.2	1.7	14.4	55.5	4.9	144	40	462
27055	STP GROUNDS, STANLEY AV NIAGARA FALLS	279	0.0	0.0	0.5	1.7	5.6	24.8	2.5	52	21	47
29000	ELGIN/KELLY ST HAMILTON	359	0.0	0.0	0.0	0.5	1.9	6.5	0.8	33	6	1
29025	BARTON/WENTWORTH HAMILTON	354	0.0	0.0	0.2	0.8	2.9	8.8	1.2	27	6	0
29102	467 BEACH BLVD HAMILTON	332	0.0	0.3	1.0	2.5	5.4	12.2	2.4	32	12	3
29114	VICKERS RD/EAST 18TH ST HAMILTON	357	0.0	0.0	0.0	0.6	1.6	5.2	0.8	16	4	0
29118	MAIN ST W/HWY403 HAMILTON	349	0.0	0.0	0.0	0.6	1.9	7.0	0.9	15	8	0
44015	BRONTE RD/WOBURN CRES OAKVILLE	365	0.0	0.0	0.4	1.0	1.9	3.8	1.1	20	4	0

TABLE A-10 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - TOTAL REDUCED SULPHUR UNIT = PARTS/BILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	EXCEEDANCES OF PULP MILL CRIT 1 HR
46117	MEADOW PK, APPLE LANE CLUB MISSISSAUGA	353	0.0	0.0	0.1	0.6	1.2	3.5	0.8	33	8	1
56051	MEMORIAL PK, BEDFORD/THIRD STS CORNWALL	363	0.0	0.9	2.1	3.3	5.4	22.5	3.4	134	15	65
56068	SCHOOL, 435 SECOND ST W CORNWALL	359	0.0	0.7	2.2	4.3	10.2	40.4	5.0	359	25	201
56071	ST. PETER'S SCHOOL CORNWALL	179	0.0	0.1	0.9	3.6	19.8	89.4	7.6	223	43	322
61027	35 VAN HORNE AV DRYDEN	362	0.0	0.0	0.0	0.0	0.6	6.5	0.4	20	4	0
62030	PORTAGE/CHURCH ST FORT FRANCES	364	0.0	0.0	0.0	2.6	15.8	49.0	4.9	126	37	414
62032	CEMETERY,COLONIZATION RD W FORT FRANCES	331	0.0	0.0	0.0	0.0	2.9	24.2	1.4	262	21	61
63034	PENINSULA BLDG MARATHON	365	0.0	0.0	0.0	0.0	3.6	21.9	1.5	175	19	53
63046	CAN-CAR, MONTREAL ST THUNDER BAY	343	0.0	0.0	0.0	0.1	2.4	11.6	1.0	51	6	2
63084	RECREATION CENTRE RED ROCK	296	0.0	0.0	0.0	0.0	3.2	20.8	1.4	77	28	44
63090	ST MARTIN SCHOOL TERRACE BAY	342	0.0	0.0	0.0	0.0	3.2	23.8	1.4	95	15	64
63093	MILL RD/SOUTH CAMP RD TERRACE BAY	344	0.0	0.0	0.0	0.5	10.5	68.6	4.2	166	49	364
63200	MTC 615 JAMES ST S THUNDER BAY	362	0.0	0.0	0.0	0.0	0.2	3.1	0.2	21	3	0
71068	MM. MERRIFIELD SCHOOL SAULT STE MARIE	238	0.0	0.0	0.0	0.4	1.0	4.3	0.6	20	3	0
72084	ROSS RD SMOOTH ROCK FALLS	361	0.0	0.0	0.1	0.6	1.4	13.1	1.1	48	22	27

TABLE A-10 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - TOTAL REDUCED SULPHUR UNIT = PARTS/BILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	EXCEEDANCES OF PULP MILL CRIT 1 HR
77203	SCIENCE NORTH SUDBURY	363	0.0	0.0	0.0	0.0	0.8	2.2	0.4	18	3	0

TABLE A-11 10-YEAR TREND FOR TRS

Annual Mean (ppb)

City	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
CORNWALL	2.8	1.8	2.0	3.4	1.5	0.8	2.6	4.3	2.5	3.4
FORT FRANCES	9.3	12.0	8.8	4.9	2.8	2.0	3.9	5.5	5.9	4.9
HAMILTON	0.9	1.3	1.2	1.4	1.8	1.4	1.4	0.9	0.8	0.8
OAKVILLE	1.5	0.6	1.4	1.2	2.8	2.4	2.4	1.6	1.4	1.1
TIVERTON	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.4	0.9	0.4
THUNDER BAY	2.9	2.8	1.0	0.5	0.6	0.8	1.0	0.8	1.0	1.0

TABLE A-12 CARBON MONOXIDE (CO) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - CARBON MONOXIDE UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	8HR	NO. OF TIMES ABOVE CRITERIA 1HR	8HR
12008	467 UNIVERSITY AV W WINDSOR	354	0.0	0.2	0.5	0.8	1.4	2.9	1.0	12	7	0	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	351	0.0	0.0	0.0	0.0	0.7	1.7	0.3	6	3	0	0
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	365	0.0	0.1	0.4	0.7	1.0	2.9	0.9	13	5	0	0
26029	EDNA/FREDERICK STS KITCHENER	359	0.0	0.2	0.5	0.8	1.7	3.7	1.1	10	8	0	0
27067	ARGYLE CRES (PUMP STN) ST CATHARINES	364	0.0	0.2	0.4	0.7	0.9	2.3	0.9	8	5	0	0
29000	ELGIN/KELLY ST HAMILTON	362	0.1	0.3	0.6	0.9	1.6	2.8	1.2	9	4	0	0
29102	467 BEACH BLVD HAMILTON	109	0.0	0.1	0.4	0.7	1.0	1.9	0.9	3	2	0	0
31049	MISSION, 381 YONGE ST TORONTO	353	0.2	0.8	1.4	2.3	3.9	9.1	2.4	18	13	0	0
31104	26 BREADALBANE TORONTO	358	0.0	0.0	0.4	0.7	1.1	2.8	0.9	10	6	0	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	356	0.0	0.2	0.5	0.8	1.5	3.8	1.1	14	8	0	0
31190	CN TOWER, 301 FRONT ST W TORONTO	358	0.0	0.0	0.0	0.3	0.8	1.0	0.4	6	2	0	0
32010	LEASIDE HYDRO STATION EAST YORK	363	0.0	0.2	0.5	0.8	1.7	3.7	1.1	10	6	0	0
33003	LAWRENCE/KENNEDY SCARBORO	351	0.0	0.3	0.6	0.9	1.7	3.8	1.2	11	7	0	0
34002	SC CTR, 770 DON MILLS RD NORTH YORK	356	0.0	0.1	0.4	0.7	1.0	2.2	0.8	5	4	0	0
34020	HENDON AVE (YONGE/FINCH) NORTH YORK	347	0.0	0.1	0.4	0.8	1.5	3.2	1.0	9	5	0	0

TABLE A-12 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - CARBON MONOXIDE UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	8HR	NO. OF TIMES ABOVE CRITERIA 1HR	8HR
34025	35 EDGAR AVE NORTH YORK WEST	354	0.0	0.1	0.4	0.8	1.5	3.2	1.0	8	5	0	0
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	343	0.0	0.0	0.0	0.5	1.0	3.9	0.7	7	6	0	0
35033	EVANS/ARNOLD AV ETOBICOKE	364	0.0	0.3	0.6	0.8	1.6	3.4	1.2	8	5	0	0
36030	CLEARVIEW HTGS/KEELE ST YORK	362	0.0	0.2	0.5	0.8	1.5	4.7	1.1	12	7	0	0
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	364	0.0	0.1	0.4	0.7	0.9	2.6	0.9	7	6	0	0
44015	BRONTE RD/WOBURN CRES OAKVILLE	365	0.0	0.2	0.5	0.7	0.9	2.0	0.9	8	4	0	0
45025	PS, RITSON RD/OLIVE AV OSHAWA	344	0.0	0.1	0.4	0.7	1.2	4.0	0.9	13	9	0	0
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	365	0.0	0.2	0.5	0.8	1.7	4.5	1.1	15	8	0	0
51001	MCD GDS, RIDEAU/WURTEMBURG ST OTTAWA	361	0.0	0.0	0.1	0.5	0.9	2.1	0.6	9	4	0	0
56051	MEMORIAL PK, BEDFORD/THIRD STS CORNWALL	361	0.0	0.0	0.3	0.6	0.9	1.9	0.8	11	4	0	0
63200	MTC 615 JAMES ST S THUNDER BAY	365	0.0	0.0	0.0	0.1	0.8	2.3	0.4	6	4	0	0
75010	OPP STN NORTH BAY	359	0.0	0.0	0.0	0.4	0.9	2.6	0.5	8	4	0	0
77203	SCIENCE NORTH SUDBURY	365	0.0	0.0	0.0	0.2	0.8	1.6	0.4	5	2	0	0

TABLE A-13 10-YEAR TREND FOR CO

Annual Mean (ppm)

City	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
CORNWALL	1.1	1.1	1.0	0.2	0.2	0.2	0.2	0.3	0.6	0.8
ETOBICOKE	1.1	1.0	1.1	1.6	1.4	1.3	1.2	1.2	1.2	0.7
HAMILTON	0.9	1.2	1.1	0.9	0.8	1.2	1.1	1.2	1.2	1.2
KITCHENER	1.1	1.1	1.0	1.0	0.9	0.8	0.9	0.8	0.9	1.1
LONDON	0.3	0.4	0.3	0.3	0.4	0.3	0.3	0.4	0.5	0.9
MISSISSAUGA	1.8	2.4	1.5	1.4	1.4	1.9	1.4	1.3	1.0	1.1
NORTH YORK	1.4	1.7	2.3	-	1.3	1.4	1.3	1.2	0.8	0.8
OAKVILLE	1.2	2.3	1.4	1.3	0.9	1.0	1.0	0.8	0.9	0.9
OSHAWA	1.8	2.0	1.9	2.0	1.8	1.0	1.2	0.8	1.1	0.9
OTTAWA	1.2	1.3	0.9	0.2	0.3	0.6	0.6	0.3	0.5	0.7
SARNIA	0.3	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.3	0.3
SCARBOROUGH	1.5	1.4	1.6	1.2	1.4	1.3	1.0	1.1	1.0	1.2
ST CATHARINES	0.6	1.0	0.4	0.4	0.4	0.2	0.2	-	1.0	0.9
SUDBURY	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.4
TORONTO	-	1.3	1.5	1.1	1.0	1.1	1.0	1.1	0.6	0.9
WINDSOR	1.7	1.1	0.5	0.8	0.5	0.5	0.5	0.7	0.9	1.0

TABLE A-14 TOTAL HYDROCARBON (THC) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - TOTAL HYDROCARBONS UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR
12008	467 UNIVERSITY AV W WINDSOR	335	1.71	1.84	1.99	2.14	2.43	3.31	2.08	6.2	3.5
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	323	1.72	1.90	2.05	2.25	2.68	4.25	2.20	8.2	4.1
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	347	1.66	1.84	2.00	2.23	2.78	5.21	2.22	10.4	5.0
29000	ELGIN/KELLY ST HAMILTON	335	1.79	1.89	1.97	2.06	2.28	2.97	2.06	4.7	4.2
31104	26 BREADALBANE TORONTO	358	1.63	1.89	2.05	2.24	2.58	3.58	2.15	6.7	3.9
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	343	1.38	1.61	1.75	1.90	2.28	4.05	1.87	8.7	4.5
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	308	1.37	1.83	2.10	2.44	3.11	5.36	2.27	11.6	4.4
35033	EVANS/ARNOLD AV ETOBICOKE	326	1.66	1.84	1.97	2.13	2.49	3.80	2.07	6.9	3.9
44015	BRONTE RD/WOBURN CRES OAKVILLE	363	1.53	1.81	1.96	2.15	2.59	5.27	2.12	10.7	6.4

TABLE A-15 10-YEAR TREND FOR THC

Annual Mean (ppm)

City	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
ETOBICOKE	2.17	2.19	2.28	2.58	2.23	2.39	2.31	1.86	2.11	2.25
LONDON	2.41	2.36	2.48	2.57	2.89	2.85	2.80	2.99	2.18	2.22
OAKVILLE	2.52	2.36	2.22	2.73	2.27	1.97	2.01	1.98	1.92	2.12
SARNIA	1.86	2.09	2.12	2.02	2.04	1.93	1.62	2.00	1.99	2.20
TORONTO	1.43	1.71	1.66	1.37	1.89	1.76	1.61	1.79	2.01	2.15
WINDSOR	2.22	2.18	2.12	2.09	2.29	2.08	2.15	2.29	2.23	2.08

TABLE A-16 REACTIVE HYDROCARBON (RHC) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - REACTIVE HYDROCARBONS UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR
12008	467 UNIVERSITY AV W WINDSOR	329	0.18	0.24	0.29	0.35	0.46	0.91	0.36	2.6	1.0
29000	ELGIN/KELLY ST HAMILTON	333	0.00	0.03	0.07	0.11	0.22	0.57	0.14	1.6	0.5

TABLE A-17 NITROGEN DIOXIDE (NO_2) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - NITROGEN DIOXIDE UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR	24HR
12008	467 UNIVERSITY AV W WINDSOR	300	.006	.014	.020	.028	.041	.067	.028	.16	.07	0	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	355	.000	.006	.011	.020	.034	.056	.019	.09	.06	0	0
15001	MRN FAIR GROUNDS, KING/RECTORY LONDON	362	.002	.008	.014	.022	.035	.057	.022	.11	.05	0	0
15013	RUC BLDG PARKHILL	360	.000	.001	.005	.008	.017	.032	.010	.12	.03	0	0
22071	EXPERIMENTAL FARM SIMCOE	350	.000	.001	.004	.008	.016	.031	.010	.06	.03	0	0
22086	CHEAPSIDE RD(3 KM S OF HWY 3) NANTICOKE	349	.000	.002	.005	.008	.014	.028	.010	.05	.03	0	0
22901	PROVINCIAL PARK LONG POINT	340	.000	.000	.001	.006	.010	.028	.007	.05	.03	0	0
26029	EDNA/FREDERICK STS KITCHENER	362	.004	.012	.018	.026	.038	.058	.025	.21	.06	1	0
27067	ARGYLE CRES (PUMP STN) ST CATHARINES	364	.003	.009	.014	.020	.031	.049	.021	.09	.04	0	0
29000	ELGIN/KELLY ST HAMILTON	361	.004	.013	.019	.026	.038	.059	.026	.09	.06	0	0
29102	467 BEACH BLVD HAMILTON	362	.000	.009	.019	.026	.037	.054	.023	.08	.06	0	0
29114	VICKERS RD/EAST 18TH ST HAMILTON	247	.000	.005	.009	.017	.028	.047	.017	.09	.04	0	0
29118	MAIN ST W/HWY403 HAMILTON	365	.002	.008	.015	.024	.037	.058	.023	.10	.05	0	0
31049	MISSION, 381 YONGE ST TORONTO	352	.011	.021	.029	.038	.055	.089	.037	.22	.09	1	0
31104	26 BREADALBANE TORONTO	364	.005	.014	.020	.027	.040	.068	.027	.14	.07	0	0

TABLE A-17 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - NITROGEN DIOXIDE UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR	24HR
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	361	.006	.015	.023	.031	.045	.074	.030	.11	.08	0	0
31190	CN TOWER, 301 FRONT ST W TORONTO	365	.000	.000	.001	.006	.015	.038	.008	.14	.03	0	0
32010	LEASIDE HYDRO STATION EAST YORK	364	.005	.014	.022	.031	.046	.077	.030	.17	.09	0	0
33003	LAWRENCE/KENNEDY SCARBORO	365	.003	.013	.020	.029	.044	.075	.027	.13	.08	0	0
34002	SC CTR, 770 DON MILLS RD NORTH YORK	364	.009	.016	.022	.029	.039	.058	.028	.14	.05	0	0
34020	HENDON AVE (YONGE/FINCH) NORTH YORK	364	.002	.010	.019	.031	.049	.080	.028	.13	.09	0	0
34025	35 EDGAR AVE NORTH YORK WEST	353	.010	.016	.023	.031	.049	.086	.032	.16	.08	0	0
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	327	.005	.014	.022	.032	.047	.075	.030	.10	.08	0	0
35033	EVANS/ARNOLD AV ETOBICOKE	356	.011	.019	.026	.034	.049	.077	.033	.15	.07	0	0
36030	CLEARVIEW HTGS/KEELE ST YORK	357	.004	.013	.020	.028	.040	.071	.027	.11	.07	0	0
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	355	.003	.009	.014	.019	.029	.048	.020	.10	.06	0	0
44015	BRONTE RD/WOBURN CRES OAKVILLE	365	.000	.004	.008	.016	.028	.048	.016	.09	.05	0	0
45025	PS, RITSON RD/OLIVE AV OSHAWA	363	.001	.009	.017	.026	.039	.066	.024	.10	.07	0	0
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	365	.004	.011	.019	.026	.037	.066	.025	.14	.07	0	0
48002	HWY47/E OF HWY48 STOUFFVILLE	331	.002	.007	.012	.017	.028	.054	.019	.12	.07	0	0

TABLE A-17 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - NITROGEN DIOXIDE UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR	24HR
49010	HWY 117/PAINT LAKE RD DORSET	243	.000	.000	.000	.000	.004	.016	.002	.04	.02	0	0
51001	MCD GDS, RIDEAU/MURTEMBURG ST OTTAWA	360	.000	.004	.010	.018	.030	.050	.017	.09	.05	0	0
56051	MEMORIAL PK, BEDFORD/THIRD STS CORNWALL	363	.000	.000	.003	.008	.018	.079	.009	.09	.04	0	0
63200	MTC 615 JAMES ST S THUNDER BAY	365	.000	.001	.006	.010	.022	.038	.012	.06	.03	0	0
71068	MM. MERRIFIELD SCHOOL SAULT STE MARIE	322	.000	.003	.008	.014	.025	.039	.015	.07	.04	0	0
75010	OPP STN NORTH BAY	345	.000	.000	.004	.009	.024	.049	.011	.09	.04	0	0
77203	SCIENCE NORTH SUDBURY	365	.000	.001	.004	.008	.018	.036	.011	.07	.03	0	0

TABLE A-18 10-YEAR TREND FOR NO_2

Annual Mean (ppm)

City	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
CORNWALL	.011	.011	.010	.011	.011	.010	.011	.010	.008	.009
ETOBICOKE	.018	.022	.021	.021	.024	.026	.027	.028	.021	.030
HAMILTON	.027	.029	.031	.029	.029	.025	.027	.026	.024	.026
KITCHENER	.026	.026	.028	.025	.027	.029	.032	.026	.027	.025
LONDON	.020	.017	.021	.021	.024	.025	.026	.021	.020	.022
MISSISSAUGA	.027	.029	.026	.026	.026	.026	.026	.025	.021	.025
NORTH YORK	.020	.014	.022	.023	.026	.027	.023	.025	.027	.028
OAKVILLE	.023	.020	.018	.016	.018	.016	.020	.017	.016	.016
OSHAWA	.019	.019	.020	.019	.021	.020	.021	.022	.024	.024
OTTAWA	.017	.016	.015	.014	.014	.012	.012	.015	.016	.017
SARNIA	.022	.018	.022	.020	.023	.019	.021	.012	.015	.019
SCARBOROUGH	.030	.025	.025	.019	.018	.018	.022	.022	.025	.027
SIMCOE	.012	.014	.010	.009	.009	.006	.005	.005	.008	.010
ST CATHARINES	.020	.022	.019	.020	.018	.017	.019	-	.018	.021
SUDBURY	.006	.007	.006	.006	.006	.007	.010	.011	.010	.011
TORONTO	.028	.025	.027	.025	.027	.026	.027	.025	.025	.027
WINDSOR	.031	.030	.029	.026	.027	.026	.025	.027	.030	.027

TABLE A-19 NITRIC OXIDE (NO) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - NITRIC OXIDE UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR
12008	467 UNIVERSITY AV W WINDSOR	303	.000	.000	.004	.010	.029	.125	.015	0.49	0.10
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	353	.000	.000	.000	.003	.015	.061	.007	0.24	0.05
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	362	.000	.000	.003	.009	.029	.160	.015	0.55	0.17
15013	PUC BLDG PARKHILL	360	.000	.000	.000	.000	.003	.015	.002	0.09	0.02
22071	EXPERIMENTAL FARM SIMCOE	350	.000	.000	.000	.000	.000	.014	.001	0.09	0.02
22086	CHEAPSIDE RD(3 KM S OF HWY 3) NANTICOKE	349	.000	.000	.000	.000	.003	.017	.002	0.13	0.03
22901	PROVINCIAL PARK LONG POINT	340	.000	.000	.000	.000	.000	.028	.001	0.07	0.05
26029	EDNA/FREDERICK STS KITCHENER	362	.000	.003	.014	.041	.117	.321	.045	0.91	0.27
27067	ARGYLE CRES (PUMP STN) ST CATHARINES	361	.000	.000	.000	.004	.021	.160	.011	0.49	0.11
29000	ELGIN/KELLY ST HAMILTON	362	.000	.000	.002	.009	.033	.121	.014	0.33	0.11
29102	467 BEACH BLVD HAMILTON	361	.000	.000	.007	.021	.049	.136	.021	0.47	0.11
29114	VICKERS RD/EAST 18TH ST HAMILTON	247	.000	.000	.000	.005	.020	.083	.009	0.20	0.07
29118	MAIN ST W/HWY403 HAMILTON	365	.000	.000	.006	.018	.070	.225	.027	0.54	0.20
31049	MISSION, 381 YONGE ST TORONTO	353	.012	.030	.052	.084	.146	.314	.075	0.86	0.31
31104	26 BREADALBANE TORONTO	365	.000	.003	.008	.017	.042	.147	.022	0.59	0.17

TABLE A-19 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - NITRIC OXIDE UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	362	.000	.003	.008	.017	.055	.250	.026	0.80	0.29
31190	CN TOWER, 301 FRONT ST W TORONTO	365	.000	.000	.000	.000	.007	.040	.003	0.66	0.11
32010	LEASIDE HYDRO STATION EAST YORK	364	.000	.004	.012	.029	.080	.285	.035	0.73	0.30
33003	LAWRENCE/KENNEDY SCARBORO	364	.000	.004	.013	.028	.070	.253	.033	0.75	0.25
34002	SC CTR, 770 DON MILLS RD NORTH YORK	362	.000	.003	.008	.018	.059	.196	.026	0.48	0.17
34020	HENDON AVE (YONGE/FINCH) NORTH YORK	340	.000	.000	.006	.016	.054	.172	.022	0.61	0.16
34025	35 EDGAR AVE NORTH YORK WEST	353	.000	.005	.017	.039	.086	.198	.037	0.46	0.17
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	343	.000	.000	.007	.018	.069	.284	.029	0.57	0.21
35033	EVANS/ARNOLD AV ETOBICOKE	357	.000	.009	.023	.045	.101	.315	.047	0.89	0.28
36030	CLEARVIEW HTGS/KEELE ST YORK	359	.000	.001	.007	.018	.078	.344	.033	0.78	0.32
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	355	.000	.000	.006	.015	.042	.154	.020	0.39	0.11
44015	BRONTE RD/WOBURN CRES OAKVILLE	362	.000	.002	.007	.016	.052	.687	.030	0.74	0.72
45025	PS, RITSON RD/OLIVE AV OSHAWA	363	.000	.000	.002	.011	.039	.175	.018	0.56	0.25
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	365	.000	.000	.005	.016	.055	.216	.024	0.68	0.22
48002	HWY47/E OF HWY48 STOUFFVILLE	365	.000	.000	.005	.010	.027	.068	.014	0.96	0.11

TABLE A-19 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - NITRIC OXIDE UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR
49010	HWY 117/PAINT LAKE RD DORSET	358	.000	.000	.000	.000	.005	.010	.003	0.02	0.01
51001	MCD GDS, RIDEAU/WURTEMBURG ST OTTAWA	361	.000	.000	.000	.006	.029	.133	.012	0.50	0.14
56051	MEMORIAL PK, BEDFORD/THIRD STS CORNWALL	363	.000	.000	.001	.005	.010	.083	.009	0.56	0.06
63200	MTC 615 JAMES ST S THUNDER BAY	365	.000	.000	.002	.008	.028	.112	.013	0.42	0.07
71068	WM. MERRIFIELD SCHOOL SAULT STE MARIE	322	.000	.003	.009	.016	.030	.093	.018	0.35	0.07
75010	OPP STN NORTH BAY	345	.000	.000	.000	.006	.024	.130	.012	0.41	0.09
77203	SCIENCE NORTH SUDBURY	365	.000	.000	.000	.003	.009	.063	.006	0.20	0.06

TABLE A-20 10-YEAR TREND FOR NO

Annual Mean (ppm)

City	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
CORNWALL	.007	.006	.005	.008	.007	.008	.005	.011	.010	.009
ETOBICOKE	.019	.026	.027	.026	.026	.027	.031	.028	.026	.029
HAMILTON	.021	.024	.024	.018	.023	.019	.022	.014	.017	.014
KITCHENER	.037	.058	.038	.045	.046	.047	.051	.051	.047	.045
LONDON	.016	.018	.015	.014	.017	.013	.019	.018	.015	.015
MISSISSAUGA	.026	.027	.025	.027	.028	.030	.032	.030	.026	.024
NORTH YORK	.028	.050	.036	.030	.027	.028	.022	.026	.021	.026
OAKVILLE	.020	.020	.015	.012	.017	.016	.020	.018	.036	.030
OSHAWA	.017	.017	.017	.013	.023	.017	.016	.019	.014	.018
OTTAWA	.013	.015	.013	.009	.012	.011	.010	.012	.011	.012
SARNIA	.010	.014	.009	.010	.008	.007	.009	.006	.006	.007
SCARBOROUGH	.029	.034	.028	.028	.033	.032	.032	.035	.033	.033
SIMCOE	.001	.002	.002	.002	.005	.004	.007	.005	.002	.001
ST CATHARINES	.009	.014	.008	.009	.016	.009	.008	-	.010	.011
SUDBURY	.005	.006	.007	.005	.007	.010	.008	.008	.005	.006
TORONTO	.016	.023	.022	.019	.021	.019	.022	.021	.018	.022
WINDSOR	.019	.017	.011	.016	.028	.015	.021	.014	.014	.015

TABLE A-21 TOTAL NITROGEN OXIDES (NO_x) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - NITROGEN OXIDES UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR
12008	467 UNIVERSITY AV W WINDSOR	302	.010	.020	.029	.041	.068	.181	.042	0.56	0.16
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	358	.002	.008	.016	.027	.053	.108	.028	0.30	0.10
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	362	.005	.014	.023	.036	.069	.211	.039	0.60	0.23
15013	PUC BLDG PARKHILL	360	.000	.002	.006	.009	.018	.040	.012	0.13	0.04
22071	EXPERIMENTAL FARM SIMCOE	350	.000	.002	.006	.009	.019	.042	.012	0.13	0.05
22086	CHEAPSIDE RD(3 KM S OF HWY 3) NANTICOKE	349	.000	.002	.005	.008	.018	.044	.011	0.19	0.06
22901	PROVINCIAL PARK LONG POINT	340	.000	.000	.000	.005	.014	.040	.007	0.10	0.05
26029	EDNA/FREDERICK STS KITCHENER	362	.008	.021	.037	.072	.158	.358	.070	0.94	0.32
27067	ARGYLE CRES (PUMP STN) ST CATHARINES	361	.004	.012	.019	.028	.057	.199	.033	0.55	0.15
29000	ELGIN/KELLY ST HAMILTON	362	.006	.017	.027	.040	.073	.167	.040	0.41	0.16
29102	467 BEACH BLVD HAMILTON	361	.000	.011	.032	.053	.086	.180	.044	0.53	0.17
29114	VICKERS RD/EAST 18TH ST HAMILTON	239	.001	.007	.014	.025	.053	.127	.027	0.25	0.10
29118	MAIN ST W/HWY403 HAMILTON	364	.005	.015	.026	.048	.108	.268	.050	0.60	0.25
31049	MISSION, 381 YONGE ST TORONTO	353	.033	.060	.089	.127	.199	.394	.112	1.00	0.40
31104	26 BREADALBANE TORONTO	364	.012	.023	.034	.049	.083	.200	.048	0.71	0.24

TABLE A-21 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - NITROGEN OXIDES UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	361	.011	.023	.034	.052	.101	.315	.055	0.90	0.37
31190	CN TOWER, 301 FRONT ST W TORONTO	365	.000	.000	.004	.008	.021	.077	.012	0.42	0.05
32010	LEASIDE HYDRO STATION EAST YORK	364	.010	.025	.040	.065	.128	.343	.065	0.81	0.38
33003	LAWRENCE/KENNEDY SCARBORO	363	.008	.023	.040	.062	.114	.314	.060	0.84	0.33
34002	SC CTR, 770 DON MILLS RD NORTH YORK	360	.015	.026	.037	.052	.096	.236	.054	0.53	0.21
34020	HENDON AVE (YONGE/FINCH) NORTH YORK	339	.005	.016	.030	.053	.105	.240	.051	0.74	0.25
34025	35 EDGAR AVE NORTH YORK WEST	353	.006	.019	.039	.067	.117	.233	.058	0.46	0.18
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	339	.009	.019	.033	.057	.128	.347	.061	0.65	0.29
35033	EVANS/ARNOLD AV ETOBICOKE	353	.018	.035	.055	.084	.150	.405	.081	1.06	0.39
36030	CLEARVIEW HTGS/KEELE ST YORK	351	.012	.022	.034	.052	.114	.397	.060	0.99	0.43
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	338	.005	.015	.025	.038	.069	.180	.039	0.39	0.13
44015	BRONTE RD/WOBURN CRES OAKVILLE	361	.006	.016	.025	.039	.077	.223	.042	0.80	0.31
45025	PS, RITSON RD/OLIVE AV OSHAWA	362	.002	.012	.024	.042	.081	.233	.042	0.65	0.32
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	364	.006	.018	.028	.042	.091	.267	.048	0.74	0.27
48002	HWY47/E OF HWY48 STOUFFVILLE	365	.000	.012	.019	.029	.051	.110	.029	0.37	0.11

TABLE A-21 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - NITROGEN OXIDES UNIT = PARTS/MILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR
49010	HWY 117/PAINT LAKE RD DORSET	360	.000	.000	.000	.003	.008	.019	.005	0.04	0.02
51001	MCD GDS, RIDEAU/MURTEMBURG ST OTTAWA	361	.000	.006	.014	.026	.059	.171	.029	0.50	0.18
56051	MEMORIAL PK, BEDFORD/THIRD STS CORNWALL	363	.000	.004	.008	.015	.032	.121	.019	0.59	0.09
63200	MTC 615 JAMES ST S THUNDER BAY	365	.001	.006	.012	.022	.052	.145	.026	0.46	0.09
71068	WM. MERRIFIELD SCHOOL SAULT STE MARIE	322	.003	.013	.021	.033	.056	.126	.032	0.36	0.09
75010	OPP STN NORTH BAY	345	.000	.003	.008	.016	.048	.172	.023	0.46	0.12
77203	SCIENCE NORTH SUDBURY	365	.000	.003	.007	.012	.029	.102	.016	0.25	0.08

TABLE A-22 OZONE (O_3) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - OZONE UNIT = PARTS/BILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR
10001	COLLEGE OF AGRIC TECH HURON PARK	365	8.9	19.1	25.9	32.8	47.5	74.5	28.0	103	68	54
12008	467 UNIVERSITY AV W WINDSOR	317	2.5	9.3	16.5	25.2	42.3	75.8	20.6	136	62	57
12016	COLLEGE/SOUTH ST WINDSOR	348	0.5	6.6	14.4	23.8	42.3	74.6	18.8	122	57	50
13021	MOE WATER PUMP STN, MIDDLE RD MERLIN	354	7.4	16.7	23.9	32.4	49.6	78.4	27.2	108	81	77
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	341	4.3	15.0	23.2	31.1	45.3	79.1	25.3	157	83	76
14118	CONCESSION RD 26 MANDAUMIN	353	8.8	18.2	26.1	33.7	49.0	81.9	28.4	125	68	101
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	364	2.4	11.5	19.6	28.0	46.4	76.3	22.9	109	73	62
15013	PUC BLDG PARKHILL	365	7.7	17.6	24.9	31.8	47.3	76.7	26.9	115	69	61
18007	CONCESSION RD 2 LOT A TIVERTON	339	16.1	26.0	31.7	37.0	48.8	81.1	33.1	128	79	86
22071	EXPERIMENTAL FARM SIMCOE	356	11.3	19.7	26.5	33.2	47.8	73.8	28.6	93	71	42
22901	PROVINCIAL PARK LONG POINT	341	14.9	24.7	31.3	41.0	60.8	98.5	35.7	135	107	257
26029	EDNA/FREDERICK STS KITCHENER	361	1.9	10.1	17.4	24.7	38.8	68.0	19.9	98	66	16
26045	WEBER/UNIVERSITY ST WATERLOO	363	1.5	11.1	18.6	26.5	43.4	68.5	21.4	93	60	12
27056	ALLENDALE AV NIAGARA FALLS	357	7.3	16.6	23.6	31.2	46.9	78.7	26.5	109	67	77
27067	ARGYLE CRES (PUMP STN) ST CATHARINES	360	1.4	11.3	18.5	26.0	39.7	67.1	20.8	105	54	10

TABLE A-22 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - OZONE UNIT = PARTS/BILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR
28028	EXHIBITION ST/CLARK ST GUELPH	360	1.2	11.8	20.1	28.1	41.9	74.3	22.1	103	65	37
29000	ELGIN/KELLY ST HAMILTON	364	0.0	5.4	12.2	20.3	38.3	76.3	16.7	127	72	64
29105	NASH RD/KENTLEY DR HAMILTON	365	0.3	8.5	15.9	24.1	40.4	71.0	19.2	106	64	37
29114	VICKERS RD/EAST 18TH ST HAMILTON	365	0.3	8.5	16.2	24.6	40.8	71.0	19.5	99	73	31
29118	MAIN ST W/HWY403 HAMILTON	365	0.0	3.9	12.6	20.6	36.1	67.8	15.9	102	65	16
31104	26 BREADALBANE TORONTO	352	1.2	6.7	13.4	20.9	35.4	67.5	16.9	139	53	26
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	333	4.1	8.9	16.3	25.1	40.3	79.1	20.5	161	57	77
31190	CN TOWER, 301 FRONT ST W TORONTO	365	7.6	21.4	30.1	41.9	62.3	95.6	34.0	146	92	265
32010	LEASIDE HYDRO STATION EAST YORK	356	1.6	6.1	13.2	21.1	32.0	55.5	16.0	91	45	9
33003	LAWRENCE/KENNEDY SCARBORO	359	0.5	6.8	14.3	22.6	37.5	74.1	17.9	156	54	55
34002	SC CTR, 770 DON MILLS RD NORTH YORK	343	0.7	4.4	9.2	15.8	25.9	49.1	12.4	96	34	5
34020	HENDON AVE (YONGE/FINCH) NORTH YORK	361	0.0	6.4	14.7	24.5	38.1	64.8	18.1	124	65	41
34025	35 EDGAR AVE NORTH YORK WEST	347	0.0	3.2	10.2	20.2	32.8	52.5	14.4	88	48	5
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	325	0.0	3.9	12.4	23.1	38.8	68.9	16.9	121	67	41
35033	EVANS/ARNOLD AV ETOBICOKE	358	0.5	3.2	9.0	15.9	30.8	62.6	13.3	94	47	11

TABLE A-22 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - OZONE UNIT = PARTS/BILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR
36030	CLEARVIEW HTGS/KEELE ST YORK	354	0.5	4.8	12.4	21.2	35.8	68.6	16.4	125	48	43
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	350	1.0	7.5	15.3	23.5	40.4	83.1	19.3	158	63	106
44015	BRONTE RD/WOBURN CRES OAKVILLE	365	0.8	8.7	18.8	28.6	45.6	83.0	22.1	132	68	112
45025	PS, RITSON RD/OLIVE AV OSHAWA	363	2.7	11.6	19.6	27.3	40.0	77.4	21.9	118	63	80
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	362	1.6	6.4	14.1	21.9	40.0	85.4	18.6	139	73	107
47035	509 VICTORIA ST E ALLISTON	364	4.8	15.2	22.3	28.5	39.3	64.3	23.3	97	47	13
48002	HWY47/E OF HWY48 STOUFFVILLE	365	7.1	19.0	25.9	33.5	47.6	83.3	28.1	125	81	106
49010	HWY 117/PAINT LAKE RD DORSET	334	15.2	25.2	31.4	36.8	49.3	77.2	32.7	138	64	58
51001	MCD GDS, RIDEAU/WURTEMBURG ST OTTAWA	361	2.4	11.1	18.6	26.5	39.9	63.5	20.9	93	59	8
52020	CHURCHILL PK, NAPIER ST KINGSTON	250	5.4	15.0	22.0	29.0	41.5	71.6	23.9	112	83	30
56051	MEMORIAL PK, BEDFORD/THIRD STS CORNWALL	361	3.4	13.3	19.6	25.2	35.6	54.7	20.4	83	55	1
59006	CITY HALL, 500 GEORGE ST PETERBORO	330	5.1	15.3	22.4	28.7	38.9	71.8	23.5	104	68	32
63100	HAWKEYE LAKE	199	8.3	19.4	25.1	31.2	45.4	69.2	26.8	90	69	16
63200	MTC 615 JAMES ST S THUNDER BAY	308	0.5	8.2	16.2	24.5	34.9	51.4	17.9	88	56	5
71068	MM. MERRIFIELD SCHOOL SAULT STE MARIE	320	3.2	12.6	20.5	28.6	40.4	57.1	22.1	102	54	15

TABLE A-22 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - OZONE UNIT = PARTS/BILLION

STATION NUMBER	LOCATION	NO. OF DAYS	PERCENTILES 10	30	50	70	90	99	ARITH-METIC MEAN	MAXIMUM 1HR	24HR	NO. OF TIMES ABOVE CRITERIA 1HR
75010	OPP STN NORTH BAY	359	8.2	19.7	27.2	34.4	46.5	69.4	28.4	96	77	36
77203	SCIENCE NORTH SUDBURY	352	11.8	21.3	27.6	33.7	45.4	67.7	28.9	95	76	15

TABLE A-23 10-YEAR TREND FOR O_3

City	Annual Mean (ppb)									
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
CORNWALL	24.8	22.7	21.5	22.7	27.6	25.8	22.8	20.8	24.0	20.4
ETOBICOKE	13.4	14.5	15.6	15.7	16.5	18.1	16.7	16.0	19.3	16.9
HAMILTON	17.4	16.3	16.9	18.7	18.0	19.0	16.4	16.2	17.9	16.7
HURON PARK	23.6	23.9	23.4	24.2	26.5	26.5	26.1	25.9	29.7	28.0
KITCHENER	20.7	18.8	17.8	18.9	18.3	19.9	17.0	17.1	21.6	19.9
LONDON	18.5	19.8	21.3	21.0	19.4	21.3	18.4	19.4	23.7	22.9
LONG POINT	32.7	31.3	34.1	29.9	31.2	34.4	31.4	31.7	38.4	35.7
MANDAUMIN	22.3	23.4	22.5	19.1	25.9	27.9	23.1	25.9	30.0	28.4
MERLIN	23.6	23.8	25.3	22.6	21.0	22.0	19.8	27.3	31.5	27.2
MISSISSAUGA	15.7	14.4	14.2	16.6	15.4	16.0	15.7	14.5	17.7	18.6
NORTH YORK	16.3	15.6	14.5	18.3	15.5	11.8	7.4	8.9	9.0	12.8
OAKVILLE	23.0	17.3	16.0	18.1	16.7	19.6	18.5	19.8	20.9	22.1
OSHAWA	17.1	17.8	18.8	21.1	17.1	18.2	17.2	17.9	20.2	21.9
OTTAWA	15.4	15.2	17.1	17.6	17.8	19.2	17.3	16.1	20.7	20.9
SARNIA	21.6	21.3	22.7	23.0	23.3	22.9	20.9	21.8	22.6	25.3
SCARBOROUGH	13.8	13.3	14.8	16.7	14.9	13.9	16.6	16.8	17.7	17.9
SIMCOE	26.3	28.9	32.3	30.0	28.7	30.6	27.6	28.4	31.2	28.6
ST CATHARINES	20.8	20.0	21.2	23.2	20.3	17.9	21.9	-	23.6	20.8
STOUFFVILLE	22.8	19.4	22.7	20.5	21.0	23.3	20.0	22.9	26.6	28.1
SUDBURY	13.9	15.6	16.0	14.2	15.8	13.4	17.1	19.4	29.5	28.9
TIVERTON	24.2	29.0	26.8	27.3	27.3	34.6	27.5	33.0	34.6	33.1
TORONTO	16.4	15.7	15.3	14.3	16.7	17.1	16.2	15.4	17.5	16.9
WINDSOR	19.9	18.8	18.1	18.7	18.9	19.7	17.4	17.6	23.5	20.6

TABLE A-24 TOTAL SUSPENDED PARTICULATE (TSP) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - SUSPENDED PARTICULATE UNIT - MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	NO OF TIMES ABOVE CRITERIA 24-HR	1-YR
10015	PUC BLDG, 64 WEST ST GODERICH	46	15	23	31	47	70	112	113	39	33	0	0
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	33	43	52	61	83	96	97	54	51	0	0
12005	7730 RIVERSIDE DR E WINDSOR	57	28	34	42	52	77	97	99	47	43	0	0
12006	BEACH LANE/HWY 18 LA SALLE	56	33	42	50	60	83	103	106	54	51	0	0
12007	WRIGHT/WATER ST WINDSOR	54	37	49	54	65	86	138	178	60	56	1	0
12008	467 UNIVERSITY AV W WINDSOR	320	39	51	61	74	96	149	174	65	61	8	1
12009	9725 RIVERSIDE DR E LITTLE RIVER	54	33	43	49	58	85	91	94	52	49	0	0
12010	SEWAGE STN, HANNING RD WINDSOR	58	22	31	37	47	67	83	88	40	37	0	0
12011	DROUILLARD RD/RICHMOND ST WINDSOR	57	44	58	65	75	98	123	132	69	66	1	1
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	53	44	57	72	89	172	200	223	86	76	10	1
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	60	47	61	82	97	115	173	177	82	76	6	1
12016	COLLEGE/SOUTH ST WINDSOR	57	42	50	58	73	92	144	156	64	61	2	1
12036	1802 GEORGE AV WINDSOR	58	30	40	48	58	83	98	98	52	48	0	0
12037	3225 CALIFORNIA ST WINDSOR	56	31	42	49	56	68	93	93	51	48	0	0
12038	2885 HOWARD AV WINDSOR	58	46	57	70	83	116	134	139	74	70	3	1
12039	DOUGLAS ST/E.C. ROW W WINDSOR	60	38	45	58	69	92	100	101	60	56	0	0
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	51	20	40	56	63	80	113	140	53	47	1	0
12049	643 ALEXANDRINE WINDSOR	59	30	41	47	62	80	96	98	52	48	0	0
12051	604 CAPITOL/REMINGTON WINDSOR	55	30	48	61	71	102	123	126	62	57	1	0
12053	415 FRONT ST AMHERSTBURG	55	32	37	45	64	79	92	102	51	47	0	0
13003	POST OFFICE, 10 CENTRE ST CHATHAM	59	35	43	49	61	88	109	113	56	52	0	0
13007	26 FERGUSON ST THAMESVILLE	34	32	45	58	75	109	156	158	65	58	3	INS
13008	RR5 BEAVER LUMBER THAMESVILLE	34	27	38	42	53	97	157	169	56	48	2	INS
14001	GENERAL HOSPITAL, 220 MITTON ST SARNIA	57	24	30	39	55	75	104	109	45	40	0	0
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	340	19	29	38	48	67	94	108	40	36	0	0
14030	RR1 (W OF HOUSE) CORUNNA	51	19	27	33	44	87	107	116	40	35	0	0

TABLE A-24 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - SUSPENDED PARTICULATE UNIT - MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	NO OF TIMES ABOVE CRITERIA 24-HR	1-YR
14031	RR1 (W OF BARN) MOORETOWN	52	15	21	28	40	54	131	166	35	29	1	0
14054	SARNIA YACHT CLUB, POINT EDWARD SARNIA	55	18	28	42	50	71	108	112	43	37	0	0
14059	ST CLAIR BLVD/HWY 40 CORUNNA	56	19	33	42	49	75	117	124	44	39	1	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	56	20	29	35	48	69	88	88	41	37	0	0
14151	DAVID/FRONT ST SARNIA	57	27	39	52	76	106	163	193	63	54	4	0
14152	CHRISTINA/EXMOUTH ST SARNIA	66	35	45	53	61	83	120	140	57	53	1	0
14153	704 MARA ST POINT EDWARD SARNIA	64	25	35	42	53	83	104	111	48	43	0	0
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	59	33	45	63	76	98	145	153	63	57	2	0
15006	16 ALEXANDRIA ST ST THOMAS	58	26	36	47	57	80	113	132	50	45	1	0
15008	EDGEWARE RD (NNW VARTA PLT) ST THOMAS	52	23	29	37	43	60	83	92	39	36	0	0
15009	LONGWOODS CONSERVATION LONGWOODS	58	16	27	36	47	67	108	124	40	35	1	0
15014	POND MILLS RD/DEVERON CRES LONDON	60	30	45	55	74	94	119	131	61	55	1	0
15015	951 COMMISSIONERS RD E LONDON	61	22	33	44	52	70	105	116	45	41	0	0
15016	801 COMMISSIONERS RD E LONDON	64	23	33	45	53	70	92	115	45	42	0	0
15017	8 MOUNTSFIELD DR LONDON	61	31	42	52	66	89	127	155	57	52	1	0
17006	ST ANTHONY'S SS, HWY 2 BEACHVILLE	40	37	47	53	76	118	199	251	70	62	4	INS
17014	CYANAMIDE RD (GORDON PROP) BEACHVILLE	52	24	43	51	63	100	150	165	59	52	3	0
17020	HWY 2 RR 2 (J SPRIEL PROP) INGERSOLL	58	46	57	70	90	124	198	200	80	73	6	1
17021	OXFORD CTY RD 6 (HESSTON FARM) EMBRO	102	39	57	77	102	160	228	230	89	75	24	1
22087	JARVIS COMMUNITY CENTRE,JAMES ST JARVIS	51	29	45	53	62	97	197	285	60	52	2	0
22090	ST GEORGE/ALMA PORT DOVER	47	26	33	37	45	67	95	96	42	39	0	0
22092	RAINHAM RD/SANDUSK RD JARVIS	41	27	33	41	45	59	90	111	42	39	0	0
22904	WALPOLE S PS, SANDUSK RD NANTICOKE	45	25	31	36	41	52	92	115	39	36	0	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	51	36	44	51	60	88	117	143	57	53	1	0
22961	NANTICOKE RD/WALPOLE CON 2 NANTICOKE	42	28	35	42	53	76	97	110	46	42	0	0
22964	N 2 KM NANTICOKE GS NANTICOKE	50	21	38	43	56	79	101	101	48	42	0	0

TABLE A-24 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - SUSPENDED PARTICULATE UNIT - MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	NO OF TIMES ABOVE CRITERIA 24-HR	1-YR
26029	EDNA/FREDERICK STS KITCHENER	56	33	47	62	73	117	136	142	67	60	4	0
26048	MONO-MULAR SCHOOL HWY89/VIOLET HILL	38	29	37	55	66	114	134	141	60	53	2	INS
27008	71 KING ST ST CATHARINES	54	34	46	57	68	94	124	131	60	55	1	0
27045	337 ALBERTA/DEVON ST WELLAND	51	34	41	49	59	71	109	134	52	48	1	0
27047	DAVIS/FRAZER PORT COLBORNE	57	32	45	51	59	78	123	135	55	51	1	0
27050	4057 VICTORIA AV NIAGARA FALLS	56	47	61	76	93	124	159	193	82	76	7	1
27051	HOLY T CHURCH, NORTON/PORTAGE CHIPPAWA	31	38	56	67	83	105	162	175	71	65	2	INS
27052	185 QUEEN ST S THOROLD	52	56	68	84	111	144	233	267	96	87	12	1
27055	STP GROUNDS, STANLEY AV NIAGARA FALLS	53	52	77	97	126	199	276	289	112	98	17	1
27056	ALLENDALE AV NIAGARA FALLS	52	33	43	50	57	75	115	125	53	50	1	0
28027	HANLON EXPWY/SPEED RIVER GUELPH	58	28	42	50	72	111	154	186	63	54	2	0
28028	EXHIBITION ST/CLARK ST GUELPH	58	21	35	44	62	80	113	126	49	43	1	0
28040	545 ST GEORGE/MAPLE FERGUS	35	5	11	20	39	64	114	133	30	18	1	INS
28041	NICOLS RD/GARAFRAXA ST W FERGUS	36	15	24	40	51	72	156	184	46	37	1	INS
29000	ELGIN/KELLY ST HAMILTON	322	43	57	72	93	142	248	300	83	75	62	1
29009	KENILWORTH HAMILTON	56	38	47	63	80	101	148	154	68	62	3	1
29011	BURLINGTON/LEEDS HAMILTON	61	61	83	103	143	189	248	251	118	107	26	1
29012	BURLINGTON/WELLINGTON HAMILTON	60	45	55	66	76	100	158	159	71	65	5	1
29017	CHATHAM/FRID HAMILTON	55	50	68	94	135	197	234	243	109	95	20	1
29025	BARTON/WENTWORTH HAMILTON	59	46	63	81	104	147	179	200	88	80	13	1
29067	450 HUGHSON ST N HAMILTON	60	39	48	55	64	85	147	168	60	55	2	0
29087	405 CUMBERLAND AV HAMILTON	61	36	42	53	65	83	141	152	59	54	2	0
29089	BARTON/NASH RD HAMILTON	58	40	58	70	81	114	162	168	74	67	5	1
29098	BAY/MAIN ST HAMILTON	60	27	43	54	64	106	128	129	60	53	4	0
29102	467 BEACH BLVD HAMILTON	330	43	62	82	107	144	226	364	89	79	64	1
29111	OFIELD RD/HWY 5 GREENSVILLE	58	51	66	97	118	184	391	549	113	94	16	1

TABLE A-24 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - SUSPENDED PARTICULATE UNIT - MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	NO OF TIMES ABOVE CRITERIA 24-HR	1-YR
29112	HARVEST RD/WESITE GREENSVILLE	54	28	39	52	59	86	200	220	58	51	2	0
29113	GERTRUDE/DEPEW HAMILTON	60	53	77	109	132	183	211	219	110	100	22	1
29114	VICKERS RD/EAST 18TH ST HAMILTON	56	31	45	57	69	101	137	141	62	54	2	0
29118	MAIN ST W/HWY403 HAMILTON	58	31	42	51	61	91	130	144	56	51	1	0
29119	MORLEY ST/PARKDALE AV HAMILTON	60	47	74	90	102	131	171	200	91	85	10	1
29122	DUNDURN/YORK HAMILTON	61	29	37	45	55	77	172	187	52	46	3	0
29124	BUCHANAN PARK PS HAMILTON	44	31	38	49	70	118	151	154	63	54	4	0
29130	EWEN RD/WHITNEY AV HAMILTON	59	22	28	33	40	56	85	90	36	33	0	0
29135	ALBRIGHT RD/MT ALBION RD HAMILTON	59	25	33	43	49	68	102	120	45	41	0	0
31045	BRUCE PS, 51 LARCHMOUNT AV TORONTO	319	28	42	54	79	120	179	320	66	56	29	0
31058	MOSLEY/LESLIE STS TORONTO	290	36	53	74	110	160	243	310	86	73	55	1
31065	633 EASTERN AV TORONTO	338	35	54	73	100	150	236	290	84	73	55	1
31082	WORKS DEPT, 138 HAMILTON AV TORONTO	321	35	55	73	93	141	226	870	84	71	55	1
31085	TECUMSETH/NIAGARA ST TORONTO	324	33	53	68	86	130	228	380	78	68	41	1
31104	26 BREADALBANE TORONTO	356	32	49	59	76	109	157	335	67	60	26	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	57	34	47	50	64	79	127	133	55	51	2	0
31181	60 BATHURST ST TORONTO	233	42	57	77	100	140	286	360	87	77	38	1
31183	FORT YORK TORONTO	330	37	52	65	86	130	240	300	76	67	42	1
32010	LEASIDE HYDRO STATION EAST YORK	41	42	56	77	87	118	187	210	78	72	4	1
33003	LAWRENCE/KENNEDY SCARBORO	59	33	55	68	92	118	215	270	77	67	6	1
34020	HENDON AVE (YONGE/FINCH) NORTH YORK	48	21	39	50	59	76	146	157	54	47	3	0
34025	35 EDGAR AVE NORTH YORK WEST	51	34	50	61	81	117	153	153	70	63	5	1
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	37	18	43	54	70	99	144	154	59	50	2	INS
35033	EVANS/ARNOLD AV ETOBICOKE	60	50	62	71	88	109	192	203	78	73	3	1
35051	RESOURCES RD (MOL LAB) ETOBICOKE	329	29	46	58	74	101	163	422	64	57	15	0
36030	CLEARVIEW HTGS/KEELE ST YORK	30	19	49	64	74	98	133	148	62	52	1	INS

TABLE A-24 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - SUSPENDED PARTICULATE UNIT - MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	NO OF TIMES ABOVE CRITERIA 24-HR	1-YR
44005	2487 LAKESHORE E/BIRKBANK RDS OAKVILLE	256	24	36	49	64	106	160	340	58	50	11	0
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	56	28	43	52	61	108	196	233	60	51	4	0
44015	BRONTE RD/WOBURN CRES OAKVILLE	41	30	42	53	72	103	226	271	66	56	2	0
45001	FIRE HALL, BAYLY/BROCK PICKERING	320	27	43	54	77	111	166	187	63	53	23	0
45007	AJAX-PICKERING HOSP AJAX	313	24	35	44	58	82	146	203	50	44	4	0
45025	PS, RITSON RD/OLIVE AV OSHAWA	60	30	46	58	69	91	140	168	61	56	2	0
46033	FIRE HALL, BRAMALEA RD BRAMALEA	49	36	57	69	105	154	325	381	90	75	10	1
46041	2414 DIXIE RD MISSISSAUGA	312	35	55	69	90	124	191	260	77	68	37	1
46045	2365 DIXIE RD MISSISSAUGA	325	32	52	68	84	112	178	395	72	64	20	1
46046	2360 DIXIE RD MISSISSAUGA	307	32	46	58	76	103	161	323	65	58	19	0
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	56	38	50	57	67	89	121	124	61	58	1	0
47019	POST OFFICE, 17-25 PETER ST S ORILLIA	17	22	42	51	65	93	108	108	55	47	0	INS
47042	ARMOURY BLDG, PARK/PARKSIDE ST BARRIE	28	22	35	49	58	88	113	113	51	44	0	INS
48002	HWY47/E OF HWY48 STOUFFVILLE	56	18	34	40	54	75	116	138	46	40	1	0
48140	CON 5 (BROWN PROP) RAVENSHOE	65	16	24	36	47	80	276	330	49	36	4	0
48141	RR2 (INGHAM PROP) KESWICK	56	10	19	24	33	46	135	290	31	24	1	0
48142	RR2 (CALDERARO PROP) KESWICK	69	12	21	30	49	84	373	380	51	33	5	0
49011	HWY 117/BELLWOOD ACRES DORSET	106	6	11	19	31	58	138	206	28	19	4	0
58027	51 SHUTER ST PORT HOPE	68	23	28	34	47	66	74	75	39	36	0	0
58041	FILT PLT, MARSH ST PORT HOPE	71	25	34	47	57	97	139	151	53	47	3	0
58042	CAN TIRE, QUEEN ST PORT HOPE	69	33	37	50	67	88	116	124	56	51	1	0
61015	18 YOUNG STREET RED LAKE	56	18	28	39	52	75	137	221	46	38	1	0
61016	98 DICKENSON ROAD BALMERTON	14	10	12	16	31	50	88	95	28	21	0	INS
61017	DICKENSON MINES LTD BALMERTON	14	10	13	19	34	105	223	249	47	26	1	INS
62004	ATIKOKAN S.S. ATIKOKAN	51	8	26	30	39	70	118	127	36	29	1	0
62032	CEMETERY,COLONIZATION RD W FORT FRANCES	57	17	22	28	37	54	74	75	32	29	0	0

TABLE A-24 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - SUSPENDED PARTICULATE UNIT - MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	NO OF TIMES ABOVE CRITERIA 24-HR	1-YR
62035	LEGION BLDG, 250 CHURCH ST FORT FRANCES	57	23	37	53	77	150	268	269	73	56	9	0
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	58	18	27	39	52	68	113	119	42	36	0	0
63012	DAWSON CT/ALGOMA ST N THUNDER BAY	58	12	19	27	40	65	115	176	35	28	1	0
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	57	17	27	37	49	79	107	109	43	36	0	0
63046	CAN-CAR, MONTREAL ST THUNDER BAY	53	28	37	49	67	104	181	220	60	52	3	0
63052	TRNSIT MAINT BD, WILLIAM RD THUNDER BAY	58	21	32	43	56	96	150	153	53	45	5	0
63200	MTC 615 JAMES ST S THUNDER BAY	56	18	31	39	52	75	105	108	44	38	0	0
63400	5 KINGSWAY ST SCHREIBER	26	11	18	24	39	50	92	111	31	24	0	INS
63401	101 MANITOBA ST SCHREIBER	38	3	17	24	39	77	157	194	36	21	1	INS
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	349	23	55	101	161	250	371	430	122	89	147	1
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	53	16	25	36	48	61	102	118	38	33	0	0
71065	HOSPITAL, LAKESHORE AV BLIND RIVER	55	8	15	21	28	40	64	64	24	20	0	0
71068	WM. MERRIFIELD SCHOOL SAULT STE MARIE	112	16	26	37	55	84	172	217	46	37	3	0
71072	FIRST AV/SECOND LINE SAULT STE MARIE	96	20	30	41	54	73	103	112	45	40	0	0
72077	MINISTRY OF HEALTH BLDG TIMMINS	25	21	32	46	58	92	150	172	51	43	1	INS
72080	CUSTOM SAWMILL RD (LEBLANC PROP) HEARST	119	17	30	53	110	334	779	810	127	65	34	1
75010	OPP STN NORTH BAY	55	12	23	29	41	56	86	110	33	28	0	0
77016	WATER TANK, ASH ST SUDBURY	49	15	22	30	45	66	83	87	36	30	0	0
77026	19 LISGAR ST SUDBURY	57	21	30	43	56	81	115	121	47	41	1	0
77029	POST OFFICE, SPRUCE/BARBER ST ESPANOLA	60	24	37	50	74	96	128	134	57	50	2	0
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	54	19	26	31	43	72	102	126	39	34	1	0
77222	TRAVERS STREET SUDBURY	86	16	24	35	56	91	151	160	48	38	6	0

TABLE A-25 10-YEAR TREND FOR TSP

Annual Geometric Mean (ug/m3)

City	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
ATIKOKAN	39	26	20	21	23	23	22	26	27	29
BRAMALEA	60	53	61	65	66	62	59	63	60	75
BURLINGTON	49	45	46	49	57	53	45	50	42	56
CHATHAM	75	65	48	45	41	43	45	51	50	52
COURTRIGHT	48	32	36	33	37	34	36	34	34	36
ESPANOLA	65	59	45	46	45	42	37	40	37	50
ETOBICOKE	52	54	55	44	46	51	63	51	43	48
FORT FRANCES	40	39	32	33	32	26	29	29	26	29
HAMILTON	88	72	81	75	81	71	76	77	81	80
JARVIS	54	43	46	46	49	49	44	43	43	52
KITCHENER	64	64	54	51	58	46	56	61	62	60
LONDON	83	58	51	52	55	42	50	65	54	57
MISSISSAUGA	70	73	62	60	68	55	53	56	54	58
NORTH BAY	46	37	34	33	37	25	29	28	28	28
NORTH YORK *	48	44	43	38	39	40	40	40	49	65
OAKVILLE	62	50	45	40	47	43	43	45	44	56
ORILLIA	50	44	59	42	43	42	40	41	64	47
OSHAWA	58	54	47	42	44	41	43	51	48	58
PICKERING	49	50	48	41	47	49	47	44	52	53
PORT COLBORNE	67	57	42	51	57	49	54	45	46	51
PORT HOPE	33	34	36	30	46	45	31	31	30	36
S.S.MARIE	62	45	40	35	37	36	34	35	35	33
SARNIA	76	62	58	59	45	46	45	42	42	37
SCARBOROUGH	70	59	57	51	60	53	55	53	51	67
ST CATHARINES	62	57	56	68	58	50	60	47	46	55
ST THOMAS	80	61	55	57	59	56	51	65	54	45
SUDBURY	42	40	34	28	28	26	29	31	25	30
THUNDER BAY	51	52	39	35	44	36	40	35	37	36
TORONTO	67	58	55	54	54	50	51	52	58	60
WELLAND	83	58	51	49	58	48	42	48	51	48
WINDSOR	77	69	62	53	50	50	61	58	60	51

* change of location from Science Centre (34002) to Yonge/Finch (34020)

TABLE A-26 LEAD (Pb) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - LEAD UNIT - .01 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	1	2	3	3	5	8	9	3	2	0
12005	7730 RIVERSIDE DR E WINDSOR	57	1	2	3	4	5	8	9	3	2	0
12007	WRIGHT/WATER ST WINDSOR	54	1	1	1	3	6	10	11	2	1	0
12008	467 UNIVERSITY AV W WINDSOR	318	2	3	4	5	7	11	15	4	3	0
12009	9725 RIVERSIDE DR E LITTLE RIVER	54	1	1	2	3	4	8	8	2	1	0
12010	SEWAGE STN, HANNING RD WINDSOR	58	1	1	2	3	4	5	5	2	1	0
12011	DROUILLARD RD/RICHMOND ST WINDSOR	57	2	4	5	6	7	13	18	5	4	0
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	53	2	3	4	6	10	16	17	5	4	0
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	60	2	3	4	5	7	9	9	4	3	0
12038	2885 HOWARD AV WINDSOR	57	3	5	7	9	12	17	18	7	6	0
12039	DOUGLAS ST/E.C. ROW W WINDSOR	60	3	4	5	8	10	17	20	6	5	0
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	51	1	2	3	3	5	8	11	3	2	0
12049	643 ALEXANDRINE WINDSOR	59	1	3	4	5	7	8	9	4	3	0
12051	604 CAPITOL/REMINGTON WINDSOR	55	2	3	5	6	9	14	17	5	4	0
13003	POST OFFICE, 10 CENTRE ST CHATHAM	59	1	2	3	3	4	6	8	3	2	0
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	340	1	1	1	2	3	6	11	2	1	0
14030	RR1 (W OF HOUSE) CORUNNA	51	1	1	2	3	5	10	13	2	2	0
14031	RR1 (W OF BARN) MOORETOWN	52	1	1	1	2	3	3	3	1	1	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	56	1	1	2	3	4	9	9	2	1	0
14152	CHRISTINA/EXMOUTH ST SARNIA	66	1	1	2	4	6	10	12	3	1	0
14153	704 MARA ST POINT EDWARD SARNIA	65	1	1	2	3	7	10	11	3	1	0
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	59	2	3	4	5	7	11	12	4	4	0
15008	EDGEWARE RD (NNW VARTA PLT) ST THOMAS	52	1	1	3	6	15	119	150	9	2	0
15009	LONGWOODS CONSERVATION LONGWOODS	58	1	1	1	2	2	4	5	1	1	0
15014	POND MILLS RD/DEVERON CRES LONDON	60	2	3	4	5	8	11	11	4	3	0
15015	951 COMMISSIONERS RD E LONDON	59	1	1	2	3	5	5	6	2	1	0

TABLE A-26 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - LEAD UNIT - .01 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
15016	801 COMMISSIONERS RD E LONDON	59	1	1	2	3	4	5	5	2	1	0
15017	8 MOUNTSFIELD DR LONDON	57	1	2	3	4	5	11	13	3	2	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	51	1	2	2	3	4	9	11	2	2	0
26029	EDNA/FREDERICK STS KITCHENER	56	1	3	5	9	14	18	19	7	5	0
27008	71 KING ST ST CATHARINES	54	1	3	3	4	5	9	10	3	3	0
28028	EXHIBITION ST/CLARK ST GUELPH	58	1	1	2	4	7	10	10	3	1	0
29011	BURLINGTON/LEEDS HAMILTON	61	4	8	12	16	23	39	49	13	10	0
29012	BURLINGTON/WELLINGTON HAMILTON	60	2	3	5	7	11	23	27	7	5	0
29017	CHATHAM/FRID HAMILTON	55	2	3	5	8	14	26	39	7	5	0
29025	BARTON/WENTWORTH HAMILTON	59	3	5	8	11	27	78	156	14	9	0
29067	450 HUGHSON ST N HAMILTON	60	2	4	5	7	12	25	33	6	5	0
29098	BAY/MAIN ST HAMILTON	60	1	3	4	9	16	29	42	7	4	0
29102	467 BEACH BLVD HAMILTON	59	2	4	7	12	19	24	24	9	6	0
29114	VICKERS RD/EAST 18TH ST HAMILTON	56	1	3	4	6	13	24	27	6	4	0
31045	BRUCE PS, 51 LARCHMOUNT AV TORONTO	319	5	5	5	10	20	50	70	11	8	0
31058	MOSLEY/LESLIE STS TORONTO	289	5	20	40	80	174	401	587	69	36	2
31065	633 EASTERN AV TORONTO	338	5	11	28	50	170	442	752	61	27	1
31082	WORKS DEPT, 138 HAMILTON AV TORONTO	322	1	2	6	9	15	36	47	7	3	0
31085	TECUMSETH/NIAGARA ST TORONTO	325	1	5	5	10	20	115	240	12	5	0
31104	26 BREADALBANE TORONTO	356	1	3	4	6	10	19	42	5	4	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	57	1	2	4	5	8	15	16	4	3	0
31181	60 BATHURST ST TORONTO	234	5	5	5	5	10	26	30	7	6	0
31183	FORT YORK TORONTO	331	1	5	5	5	10	20	20	5	3	0
32010	LEASIDE HYDRO STATION EAST YORK	41	1	2	3	5	9	12	13	4	2	0
33003	LAWRENCE/KENNEDY SCARBORO	59	1	1	3	5	8	13	13	4	2	0
34020	HENDON AVE (YONGE/FINCH) NORTH YORK	48	1	1	1	3	6	8	9	2	1	0

TABLE A-26 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - LEAD UNIT - .01 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
34025	35 EDGAR AVE NORTH YORK WEST	51	1	1	1	3	8	12	15	2	1	0
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	39	1	1	1	3	6	9	9	2	1	0
35033	EVANS/ARNOLD AV ETOBICOKE	60	1	3	5	7	11	20	26	6	3	0
36030	CLEARVIEW HTGS/KEELE ST YORK	30	1	2	5	6	8	20	24	5	2	0
44005	2487 LAKESHORE E/BIRKBANK RDS OAKVILLE	256	1	1	2	3	4	8	20	2	1	0
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	56	1	1	3	4	8	14	20	4	2	0
44015	BRONTE RD/WOBURN CRES OAKVILLE	41	1	2	4	5	9	11	12	4	2	0
45025	PS, RITSON RD/OLIVE AV OSHAWA	60	1	1	2	4	7	11	13	3	1	0
46033	FIRE HALL, BRAMALEA RD BRAMALEA	50	1	2	4	6	9	11	12	5	3	0
46041	2414 DIXIE RD MISSISSAUGA	312	23	60	109	181	456	812	2199	182	104	23
46045	2365 DIXIE RD MISSISSAUGA	325	4	12	23	49	144	380	1639	58	22	2
46046	2360 DIXIE RD MISSISSAUGA	307	13	31	66	120	260	443	872	104	57	1
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	56	1	1	3	4	7	11	12	3	1	0
47042	ARMOURY BLDG, PARK/PARKSIDE ST BARRIE	28	1	1	3	5	7	9	10	3	2	0
48002	HWY47/E OF HWY48 STOUFFVILLE	56	1	1	2	3	7	23	26	3	1	0
48140	CON 5 (BROWN PROP) RAVENSHOE	65	1	1	2	3	5	6	6	2	1	0
48141	RR2 (INGHAM PROP) KESWICK	55	1	1	1	2	3	4	5	1	1	0
48142	RR2 (CALDERARO PROP) KESWICK	70	1	1	1	2	3	7	8	1	1	0
61015	18 YOUNG STREET RED LAKE	56	1	1	2	4	33	513	599	30	2	1
61016	98 DICKENSON ROAD BALMERTON	14	1	2	2	4	6	6	6	3	2	0
61017	DICKENSON MINES LTD BALMERTON	14	1	1	2	3	4	63	95	9	2	0
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	58	2	2	3	5	7	16	18	4	3	0
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	57	1	2	3	4	6	11	13	3	3	0
63200	MTC 615 JAMES ST S THUNDER BAY	56	1	1	3	5	9	15	21	4	2	0
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	348	1	2	3	4	7	14	19	3	2	0
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	49	1	2	2	3	4	7	7	3	2	0

TABLE A-26 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - LEAD UNIT - .01 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
71068	MH. MERRIFIELD SCHOOL SAULT STE MARIE	105	1	1	2	3	4	8	9	2	2	0
71072	FIRST AV/SECOND LINE SAULT STE MARIE	92	1	2	2	3	4	7	8	2	2	0
75010	OPP STN NORTH BAY	46	1	1	2	3	4	7	7	2	1	0
77016	WATER TANK, ASH ST SUDBURY	47	1	2	3	4	9	12	12	4	3	0
77026	19 LISGAR ST SUDBURY	53	2	3	4	4	6	13	15	4	3	0
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	50	1	1	3	5	18	32	35	6	2	0

TABLE A-27 10-YEAR TREND FOR Pb

Annual Geometric mean (ug/m3)

City	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
BRAMALEA	.2	.2	.3	.3	.2	.2	.2	.1	.04	.03
CHATHAM	.3	.2	.2	.2	.2	.1	.1	.1	.04	.02
ETOBICOKE	.1	.2	.3	.3	.2	.2	.2	.1	.03	.01
HAMILTON	.5	.6	.4	.4	.4	.3	.3	.2	.12	.09
LONDON	.4	.3	.3	.3	.3	.2	.1	.1	.07	.04
MISSISSAUGA	.3	.4	.3	.3	.3	.2	.2	.1	.03	.01
NORTH BAY	.2	.2	.2	.2	.1	.1	.1	.1	.02	.01
NORTH YORK *	.4	.4	.3	.3	.3	.2	.2	.1	-	.01
OSHAWA	.3	.2	.2	.2	.2	.2	.1	.1	.03	.01
S.S. MARIE	.3	.2	.1	.2	.2	.2	.1	.1	.03	.03
SARNIA	.1	.1	.1	.2	.1	.1	.1	.0	.03	.01
SCARBOROUGH	.3	.3	.3	.3	.4	.3	.2	.1	.05	.02
SUDBURY	.1	.2	.1	.1	.1	.1	.1	.1	.03	.03
THUNDER BAY	.1	.2	.2	.2	.2	.1	.1	.1	.05	.03
TORONTO	.3	.4	.2	.3	.3	.2	.2	.1	.07	.04
WINDSOR	.3	.2	.2	.2	.2	.2	.2	.1	.05	.02

* change of location from Science Centre (34002) to Yonge/Finch (34020)
- beginning in 1988 lead reported to .01 ug/m3

TABLE A-28 IRON (Fe) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - IRON IN TOTAL SUSPENDED PARTICULATE UNIT - .1 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	5	8	10	15	23	26	28	12	10
12005	7730 RIVERSIDE DR E WINDSOR	57	3	4	7	10	15	26	29	8	6
12007	WRIGHT/WATER ST WINDSOR	54	8	14	18	25	39	106	137	24	18
12008	467 UNIVERSITY AV W WINDSOR	318	6	9	11	16	24	39	65	14	11
12010	SEWAGE STN, HANNING RD WINDSOR	58	2	3	4	7	10	14	15	5	4
12011	DROUILLARD RD/RICHMOND ST WINDSOR	57	10	16	19	26	39	62	71	22	19
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	53	8	13	19	35	97	154	159	38	23
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	60	12	14	19	25	37	67	71	22	19
12016	COLLEGE/SOUTH ST WINDSOR	56	9	12	16	22	30	72	73	20	16
12038	2885 HOWARD AV WINDSOR	57	12	20	35	58	141	208	237	55	37
12039	DOUGLAS ST/E.C. ROW W WINDSOR	60	7	11	15	18	28	60	62	16	14
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	51	5	9	11	14	22	32	36	12	11
12049	643 ALEXANDRINE WINDSOR	59	5	7	12	15	25	37	46	13	10
12051	604 CAPITOL/REMINGTON WINDSOR	55	5	9	15	24	38	50	53	19	15
13003	POST OFFICE, 10 CENTRE ST CHATHAM	59	2	4	6	7	10	21	21	6	5
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	340	2	3	4	5	7	14	36	4	4
14030	RR1 (W OF HOUSE) CORUNNA	51	1	2	3	4	9	17	17	4	3
14031	RR1 (W OF BARN) MOORETOWN	52	1	2	2	4	7	12	14	3	2
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	56	1	2	3	5	8	15	19	4	3
14152	CHRISTINA/EXMOUTH ST SARNIA	66	3	4	7	8	11	19	22	7	6
14153	704 MARA ST POINT EDWARD SARNIA	64	2	3	5	6	11	22	27	6	5
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	59	2	5	7	9	15	24	26	8	6
15009	LONGWOODS CONSERVATION LONGWOODS	58	2	2	4	4	8	22	34	5	3
15014	POND MILLS RD/DEVERON CRES LONDON	60	2	4	5	8	12	20	28	7	5
15015	951 COMMISSIONERS RD E LONDON	59	2	3	4	5	7	19	23	4	3
15016	801 COMMISSIONERS RD E LONDON	59	1	3	4	5	7	16	20	4	3

TABLE A-28 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - IRON IN TOTAL SUSPENDED PARTICULATE UNIT - .1 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN
15017	8 MOUNTSFIELD DR LONDON	57	2	4	5	6	9	17	18	5	4
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	51	7	11	19	28	71	92	96	26	18
26029	EDNA/FREDERICK STS KITCHENER	56	2	4	6	8	12	21	22	7	5
27008	71 KING ST ST CATHARINES	54	3	6	7	8	13	26	32	8	7
29011	BURLINGTON/LEEDS HAMILTON	61	22	38	57	80	119	144	145	64	53
29012	BURLINGTON/WELLINGTON HAMILTON	60	6	11	14	22	35	45	54	18	15
29017	CHATHAM/FRID HAMILTON	55	8	15	20	28	48	60	61	24	19
29025	BARTON/WENTWORTH HAMILTON	59	6	15	23	46	78	142	161	36	24
29067	450 HUGHSON ST N HAMILTON	59	5	9	11	17	25	41	56	14	12
29098	BAY/MAIN ST HAMILTON	60	3	6	10	20	50	71	72	18	12
29102	467 BEACH BLVD HAMILTON	59	6	15	38	67	92	127	160	45	26
29114	VICKERS RD/EAST 18TH ST HAMILTON	56	3	7	9	15	37	76	77	16	10
31045	BRUCE PS, 51 LARCHMOUNT AV TORONTO	302	3	6	9	15	26	68	88	13	9
31058	MOSLEY/LESLIE STS TORONTO	273	4	9	13	21	38	68	87	18	13
31065	633 EASTERN AV TORONTO	322	4	8	12	19	33	70	74	16	12
31085	TECUMSETH/NIAGARA ST TORONTO	307	5	9	12	18	31	93	250	18	12
31104	26 BREADALBANE TORONTO	356	2	6	9	13	20	51	85	11	7
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	57	3	5	7	10	14	25	30	8	6
31181	60 BATHURST ST TORONTO	221	6	10	14	21	33	77	124	18	14
31183	FORT YORK TORONTO	315	5	9	12	17	26	65	71	15	12
44005	2487 LAKESHORE E/BIRKBANK RDS OAKVILLE	256	2	4	5	8	13	30	64	7	5
48140	CON 5 (BROWN PROP) RAVENSHOE	65	1	2	4	5	8	32	61	5	3
48141	RR2 (INGHAM PROP) KESWICK	55	1	1	2	3	4	20	50	3	2
48142	RR2 (CALDERARO PROP) KESWICK	70	1	2	3	5	9	49	66	5	3
61016	98 DICKENSON ROAD BALMERTON	14	1	1	5	9	22	30	31	8	2
61017	DICKENSON MINES LTD BALMERTON	14	2	9	16	28	188	361	393	66	19

TABLE A-28 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - IRON IN TOTAL SUSPENDED PARTICULATE UNIT - .1 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	58	3	6	11	16	32	48	50	14	10
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	57	2	5	9	14	23	51	53	12	8
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	348	10	28	77	135	256	581	1200	115	60
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	49	3	6	13	22	27	67	73	16	11
71068	MM. MERRIFIELD SCHOOL SAULT STE MARIE	105	2	6	11	21	63	119	136	21	10
71072	FIRST AV/SECOND LINE SAULT STE MARIE	92	2	4	8	15	24	38	52	11	8
75010	OPP STN NORTH BAY	46	2	3	3	5	9	13	14	5	4
77016	WATER TANK, ASH ST SUDBURY	47	2	5	8	11	15	47	72	10	7
77026	19 LISGAR ST SUDBURY	53	2	5	10	13	22	34	36	11	7
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	50	5	8	11	18	31	79	102	17	12

TABLE A-29 10-YEAR TREND FOR Fe

Annual geometric mean (ug/m3)

City	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
CHATHAM	1.1	0.8	0.6	0.7	0.5	0.6	0.5	0.7	0.6	0.5
HAMILTON	2.6	2.3	2.5	2.2	2.3	1.9	2.8	2.5	2.7	2.4
LONDON	1.0	0.7	0.5	0.6	0.6	0.5	0.4	0.8	0.7	0.6
NORTH BAY	0.6	0.4	0.5	0.2	0.3	0.3	0.1	0.4	0.4	0.4
S.S.MARIE	1.9	1.2	0.5	0.5	0.7	1.2	0.5	1.1	0.9	1.0
SUDBURY	0.9	1.0	0.7	0.7	0.5	0.6	0.5	0.9	0.7	0.7
THUNDER BAY	1.3	1.0	1.0	0.9	1.2	0.8	1.0	1.0	1.0	1.0
TORONTO	0.6	0.9	0.7	0.8	0.8	0.7	0.6	0.8	0.9	0.7
WINDSOR	1.2	1.4	1.2	1.1	1.1	1.0	1.0	1.5	1.4	1.0

TABLE A-30 MANGANESE (Mn) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - MANGANESE IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	20	30	40	60	100	160	200	53	45	0
12005	7730 RIVERSIDE DR E WINDSOR	57	10	20	30	40	70	116	160	36	28	0
12008	467 UNIVERSITY AV W WINDSOR	318	20	40	50	70	110	205	260	59	48	0
12010	SEWAGE STN, HANNING RD WINDSOR	59	5	10	20	30	50	80	80	24	18	0
12011	DROUILLARD RD/RICHMOND ST WINDSOR	57	30	60	80	102	158	389	480	97	76	0
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	53	30	50	80	164	546	835	840	185	99	0
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	60	40	60	80	100	140	260	380	89	77	0
12038	2885 HOWARD AV WINDSOR	57	40	50	80	112	180	248	290	93	76	0
12039	DOUGLAS ST/E.C. ROW W WINDSOR	60	30	40	55	70	100	148	160	60	54	0
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	51	20	30	40	50	70	105	110	43	38	0
12049	643 ALEXANDRINE WINDSOR	59	20	30	40	50	72	98	110	42	36	0
12051	604 CAPITOL/REMINGTON WINDSOR	55	20	30	50	70	100	130	130	55	46	0
13003	POST OFFICE, 10 CENTRE ST CHATHAM	59	10	20	20	30	40	70	70	26	22	0
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	340	5	5	10	20	20	40	50	13	10	0
14030	RR1 (W OF HOUSE) CORUNNA	51	5	5	10	20	30	55	60	15	11	0
14031	RR1 (W OF BARN) MOORETOWN	52	5	5	10	10	20	40	40	12	9	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	56	5	7	10	20	30	40	40	14	11	0
14152	CHRISTINA/EXMOUTH ST SARNIA	66	10	20	30	40	50	89	140	30	25	0
14153	704 MARA ST POINT EDWARD SARNIA	64	6	10	20	30	47	85	120	25	19	0
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	59	20	20	30	46	62	166	210	40	33	0
15009	LONGWOODS CONSERVATION LONGWOODS	58	5	10	10	20	33	67	100	19	14	0
15014	POND MILLS RD/DEVERON CRES LONDON	60	10	20	30	40	60	78	90	35	30	0
15015	951 COMMISSIONERS RD E LONDON	59	10	10	20	30	40	58	70	23	19	0
15016	801 COMMISSIONERS RD E LONDON	59	5	20	20	20	40	58	70	22	18	0
15017	8 MOUNTSFIELD DR LONDON	57	10	20	20	40	54	74	80	30	24	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	51	30	60	80	120	320	455	530	123	84	0

TABLE A-30 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - MANGANESE IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
26029	EDNA/FREDERICK STS KITCHENER	56	20	30	50	75	100	171	200	57	44	0
27008	71 KING ST ST CATHARINES	54	30	40	45	50	77	105	110	48	45	0
29011	BURLINGTON/LEEDS HAMILTON	61	160	250	340	510	800	1022	1140	422	353	0
29012	BURLINGTON/WELLINGTON HAMILTON	60	50	90	130	170	281	783	1450	168	124	0
29017	CHATHAM/FRID HAMILTON	55	50	90	130	198	336	520	600	171	131	0
29025	BARTON/WENTWORTH HAMILTON	59	58	120	190	376	592	1979	3950	332	199	1
29067	450 HUGHSON ST N HAMILTON	59	30	64	80	136	242	372	440	116	89	0
29098	BAY/MAIN ST HAMILTON	60	20	50	60	110	326	858	900	141	77	0
29102	467 BEACH BLVD HAMILTON	59	48	140	270	400	614	724	730	296	195	0
29114	VICKERS RD/EAST 18TH ST HAMILTON	56	30	40	60	100	274	454	500	106	70	0
31045	BRUCE PS, 51 LARCHMOUNT AV TORONTO	302	20	30	40	60	100	180	340	54	43	0
31058	MOSLEY/LESLIE STS TORONTO	273	20	40	60	90	148	296	460	77	60	0
31065	633 EASTERN AV TORONTO	322	20	40	60	80	140	246	390	72	58	0
31085	TECUMSETH/NIAGARA ST TORONTO	307	20	30	50	70	120	239	340	61	48	0
31104	26 BREADALBANE TORONTO	356	20	30	40	60	85	180	220	50	42	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	56	20	30	40	50	65	106	150	41	35	0
31181	60 BATHURST ST TORONTO	221	30	40	60	80	130	224	290	67	55	0
31183	FORT YORK TORONTO	315	20	30	50	60	100	249	270	60	48	0
44005	2487 LAKESHORE E/BIRKBANK RDS OAKVILLE	115	10	20	30	40	60	119	130	36	27	0
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	58	20	30	40	60	100	150	180	52	42	0
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	57	15	30	40	60	108	144	150	51	38	0
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	348	80	230	525	860	1351	2427	2690	635	392	1
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	49	20	40	70	100	180	325	350	90	62	0
71068	WM. MERRIFIELD SCHOOL SAULT STE MARIE	105	20	40	70	148	390	723	1010	141	78	0
71072	FIRST AV/SECOND LINE SAULT STE MARIE	92	20	30	65	100	228	318	410	92	59	0
75010	OPP STN NORTH BAY	46	5	10	20	30	40	55	60	21	17	0

TABLE A-30 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - MANGANESE IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
77016	WATER TANK, ASH ST SUDBURY	47	5	10	10	20	20	30	30	14	12	0
77026	19 LISGAR ST SUDBURY	53	5	20	30	30	40	63	80	25	21	0

TABLE A-31 NICKEL (NI) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - NICKEL IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	5	5	5	10	30	293	320	23	9	0
12005	7730 RIVERSIDE DR E WINDSOR	57	5	5	5	5	10	20	20	7	6	0
12008	467 UNIVERSITY AV W WINDSOR	318	5	5	5	10	20	120	350	14	8	0
12010	SEWAGE STN, HANNING RD WINDSOR	58	5	5	5	5	6	10	10	6	5	0
12011	DROUILLARD RD/RICHMOND ST WINDSOR	57	5	5	5	10	24	134	140	16	9	0
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	53	5	5	5	10	20	56	80	11	8	0
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	60	5	5	5	5	10	27	40	7	6	0
12038	2885 HOWARD AV WINDSOR	57	5	5	5	10	13	73	120	11	8	0
12039	DOUGLAS ST/E.C. ROW W WINDSOR	60	5	5	5	5	5	31	60	7	6	0
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	51	5	5	5	5	10	32	50	7	6	0
12049	643 ALEXANDRINE WINDSOR	59	5	5	5	5	5	13	20	5	5	0
12051	604 CAPITOL/REMINGTON WINDSOR	55	5	5	5	5	8	10	10	6	5	0
13003	POST OFFICE, 10 CENTRE ST CHATHAM	59	5	5	5	5	5	10	10	5	5	0
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	340	5	5	5	5	10	40	50	7	6	0
14030	RR1 (W OF HOUSE) CORUNNA	51	5	5	5	5	5	10	10	5	5	0
14031	RR1 (W OF BARN) MOORETOWN	52	5	5	5	5	5	10	10	5	5	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	56	5	5	5	5	14	34	40	8	7	0
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	59	5	5	5	5	5	7	10	5	5	0
15009	LONGWOODS CONSERVATION LONGWOODS	58	5	5	5	5	5	10	10	5	5	0
15014	POND MILLS RD/DEVERON CRES LONDON	60	5	5	5	5	5	13	20	6	5	0
15015	951 COMMISSIONERS RD E LONDON	59	5	5	5	5	10	24	30	7	6	0
15016	801 COMMISSIONERS RD E LONDON	59	5	5	5	5	10	30	30	6	6	0
15017	8 MOUNTSFIELD DR LONDON	57	5	5	5	5	7	16	30	6	5	0
22907	RAINHAM RD (NEAR [illegible]LCO GATE) NANTICOKE	51	5	5	5	5	5	17	30	6	5	0
26029	EDNA/FREDERICK STS KITCHENER	56	5	5	5	5	5	7	10	5	5	0
27008	71 KING ST ST CATHARINES	54	5	5	5	5	8	19	40	6	6	0

TABLE A-31 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - NICKEL IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
27047	DAVIS/FRAZER PORT COLBORNE	57	20	38	60	102	358	3106	3660	249	76	2
29011	BURLINGTON/LEEDS HAMILTON	61	5	5	5	10	10	20	20	7	7	0
29012	BURLINGTON/WELLINGTON HAMILTON	60	5	5	5	5	5	22	70	6	5	0
29017	CHATHAM/FRID HAMILTON	55	5	5	5	5	5	14	20	5	5	0
29025	BARTON/WENTWORTH HAMILTON	59	5	5	5	10	10	24	30	7	7	0
29067	450 HUGHSON ST N HAMILTON	60	5	5	5	5	5	10	10	5	5	0
29098	BAY/MAIN ST HAMILTON	60	5	5	5	5	5	10	10	5	5	0
29102	467 BEACH BLVD HAMILTON	59	5	5	5	5	10	22	24	6	6	0
29114	VICKERS RD/EAST 18TH ST HAMILTON	56	5	5	5	5	10	38	50	7	6	0
31045	BRUCE PS, 51 LARCHMOUNT AV TORONTO	302	5	5	5	5	10	20	20	6	6	0
31058	MOSLEY/LESLIE STS TORONTO	273	5	5	5	10	10	30	40	8	7	0
31065	633 EASTERN AV TORONTO	322	5	5	5	5	10	28	40	7	6	0
31085	TECUMSETH/NIAGARA ST TORONTO	307	5	5	5	5	10	89	380	10	6	0
31104	26 BREADALBANE TORONTO	356	5	5	5	5	10	10	80	6	5	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	57	5	5	5	5	10	10	10	6	6	0
31181	60 BATHURST ST TORONTO	221	5	5	5	5	10	30	80	7	6	0
31183	FORT YORK TORONTO	315	5	5	5	5	10	20	50	6	6	0
44005	2487 LAKESHORE E/BIRKBANK RDS OAKVILLE	256	5	5	5	10	18	30	35	9	7	0
48140	CON 5 (BROWN PROP) RAVENSHOE	65	1	3	7	11	18	24	32	9	6	0
48141	RR2 (INGHAM PROP) KESWICK	55	3	6	9	12	21	30	33	11	8	0
48142	RR2 (CALDERARO PROP) KESWICK	70	1	4	8	10	20	49	52	10	6	0
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	58	5	5	5	5	5	5	5	5	5	0
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	57	5	5	5	5	5	5	5	5	5	0
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	348	5	5	5	5	10	30	50	7	6	0
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	49	5	5	5	5	10	10	10	6	5	0
71068	WM. MERRIFIELD SCHOOL SAULT STE MARIE	105	5	5	5	5	5	10	10	5	5	0

TABLE A-31 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - NICKEL IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
71072	FIRST AV/SECOND LINE SAULT STE MARIE	92	5	5	5	5	5	5	5	5	5	0
75010	OPP STN NORTH BAY	46	5	5	5	5	5	7	10	5	5	0
77016	WATER TANK, ASH ST SUDBURY	47	30	68	150	260	634	1463	2370	275	137	1
77026	19 LISGAR ST SUDBURY	53	30	40	70	130	511	650	710	148	83	0
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	50	80	174	255	473	1596	4241	4360	664	328	4

TABLE A-32 CHROMIUM (Cr) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - CHROMIUM IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR[3]
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	5	5	5	10	17	62	100	10	7	0
12005	7730 RIVERSIDE DR E WINDSOR	57	5	5	5	5	10	14	20	6	6	0
12008	467 UNIVERSITY AV W WINDSOR	318	5	5	10	20	30	50	80	13	10	0
12010	SEWAGE STN, HANNING RD WINDSOR	58	5	5	5	5	10	10	10	6	5	0
12011	DROUILLARD RD/RICHMOND ST WINDSOR	57	5	5	5	10	24	44	50	11	9	0
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	53	5	10	10	20	40	73	110	18	13	0
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	60	5	5	5	5	10	20	20	7	6	0
12038	2885 HOWARD AV WINDSOR	57	5	9	10	20	40	78	90	18	13	0
12039	DOUGLAS ST/E.C. ROW W WINDSOR	60	5	5	5	5	10	20	20	6	6	0
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	51	5	5	5	5	10	24	30	7	6	0
12049	643 ALEXANDRINE WINDSOR	59	5	5	5	5	5	10	10	5	5	0
12051	604 CAPITOL/REMINGTON WINDSOR	55	5	5	5	5	15	41	60	9	7	0
13003	POST OFFICE, 10 CENTRE ST CHATHAM	59	5	5	5	8	20	20	20	8	7	0
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	340	5	5	5	5	10	30	40	7	6	0
14030	RR1 (W OF HOUSE) CORUNNA	51	5	5	5	5	5	14	20	6	5	0
14031	RR1 (W OF BARN) MOORETOWN	52	5	5	5	5	5	5	5	5	5	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	56	5	5	5	5	10	14	20	6	6	0
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	59	5	5	5	5	30	50	50	10	7	0
15009	LONGWOODS CONSERVATION LONGWOODS	58	5	5	5	5	14	34	40	8	7	0
15014	POND MILLS RD/DEVERON CRES LONDON	60	5	5	5	5	5	10	10	6	5	0
15015	951 COMMISSIONERS RD E LONDON	59	5	5	5	5	10	20	20	7	6	0
15016	801 COMMISSIONERS RD E LONDON	59	5	5	5	5	10	24	30	6	6	0
15017	8 MOUNTSFIELD DR LONDON	57	5	5	5	5	10	20	20	7	6	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	51	5	5	5	10	10	39	50	8	7	0
26029	EDNA/FREDERICK STS KITCHENER	56	5	5	5	5	10	24	30	7	6	0
27008	71 KING ST ST CATHARINES	54	5	5	5	5	20	20	20	8	7	0

TABLE A-32 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - CHROMIUM IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
29011	BURLINGTON/LEEDS HAMILTON	61	10	20	30	30	40	70	70	29	25	0
29012	BURLINGTON/WELLINGTON HAMILTON	60	5	5	5	10	30	44	50	11	8	0
29017	CHATHAM/FRID HAMILTON	55	5	5	5	20	30	50	50	14	10	0
29025	BARTON/WENTWORTH HAMILTON	59	5	5	20	30	50	64	70	22	15	0
29067	450 HUGHSON ST N HAMILTON	60	5	5	5	6	20	30	30	9	7	0
29098	BAY/MAIN ST HAMILTON	60	5	5	5	5	11	53	80	8	6	0
29102	467 BEACH BLVD HAMILTON	59	5	5	8	20	30	51	58	14	10	0
29114	VICKERS RD/EAST 18TH ST HAMILTON	56	5	5	5	5	10	38	50	8	6	0
31045	BRUCE PS, 51 LARCHMOUNT AV TORONTO	302	5	5	5	10	20	40	50	8	7	0
31058	MOSLEY/LESLIE STS TORONTO	273	5	5	5	10	20	40	50	10	8	0
31065	633 EASTERN AV TORONTO	322	5	10	20	30	50	130	290	24	16	0
31085	TECUMSETH/NIAGARA ST TORONTO	307	5	5	5	10	20	40	60	10	8	0
31104	26 BREADALBANE TORONTO	356	5	5	5	5	10	20	60	7	6	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	57	5	5	5	10	10	20	20	7	7	0
31181	60 BATHURST ST TORONTO	221	5	5	10	10	20	38	60	11	9	0
31183	FORT YORK TORONTO	315	5	5	5	10	20	38	70	9	8	0
44005	2487 LAKESHORE E/BIRKBANK RDS OAKVILLE	256	3	5	5	8	14	37	40	12	6	0
48140	CON 5 (BROWN PROP) RAVENSHOE	65	1	1	5	7	11	34	53	6	4	0
48141	RR2 (INGHAM PROP) KESWICK	55	1	1	4	5	7	25	36	5	3	0
48142	RR2 (CALDERARO PROP) KESWICK	70	1	2	4	6	11	34	57	6	4	0
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	58	5	5	5	5	5	10	10	5	5	0
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	57	5	5	5	5	10	20	20	7	6	0
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	5	1	2	46	81	119	138	140	56	14	0
75010	OPP STN NORTH BAY	46	5	5	5	5	10	20	20	7	6	0
77016	WATER TANK, ASH ST SUDBURY	47	5	5	5	5	5	7	10	5	5	0
77026	19 LISGAR ST SUDBURY	53	5	5	5	5	5	47	250	10	6	0

TABLE A-32 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - CHROMIUM IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	50	5	5	5	5	5	18	30	6	5	0

TABLE A-33 CADMIUM (Cd) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - CADMIUM IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES CRITER 24-HR	% ABOVE RIA HR
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	1	1	1	2	5	7	8	2	1	0	0
12005	7730 RIVERSIDE DR E WINDSOR	57	1	1	1	1	2	6	7	1	1	0	0
12008	467 UNIVERSITY AV W WINDSOR	318	1	1	1	2	6	24	25	2	1	0	0
12010	SEWAGE STN, HANNING RD WINDSOR	58	1	1	1	1	2	4	4	1	0	0	0
12011	DROUILLARD RD/RICHMOND ST WINDSOR	57	1	1	1	2	4	7	8	2	1	0	0
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	53	1	1	1	2	4	7	7	1	1	0	0
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	61	1	1	2	3	7	20	28	3	2	0	0
12038	2885 HOWARD AV WINDSOR	57	1	1	1	2	3	7	8	1	1	0	0
12039	DOUGLAS ST/E.C. ROW W WINDSOR	60	1	1	1	2	3	8	14	2	1	0	0
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	51	1	1	1	1	2	6	12	1	1	0	0
12049	643 ALEXANDRINE WINDSOR	59	1	1	1	2	3	7	11	1	1	0	0
12051	604 CAPITOL/REMINGTON WINDSOR	56	1	1	1	2	3	7	12	1	1	0	0
13003	POST OFFICE, 10 CENTRE ST CHATHAM	59	1	1	1	1	1	2	3	0	0	0	0
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	340	1	1	1	1	1	2	3	0	0	0	0
14030	RR1 (W OF HOUSE) CORUNNA	51	1	1	1	1	1	13	80	2	0	0	0
14031	RR1 (W OF BARN) MOORETOWN	52	1	1	1	1	2	2	2	1	0	0	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	56	1	1	1	1	1	1	2	0	0	0	0
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	59	1	1	1	1	1	4	5	0	0	0	0
15009	LONGWOODS CONSERVATION LONGWOODS	58	1	1	1	1	1	1	1	0	0	0	0
15014	POND MILLS RD/DEVERON CRES LONDON	60	1	1	1	1	1	1	2	0	0	0	0
15015	951 COMMISSIONERS RD E LONDON	59	1	1	1	1	1	1	2	0	0	0	0
15016	801 COMMISSIONERS RD E LONDON	59	1	1	1	1	1	1	1	0	0	0	0
15017	8 MOUNTSFIELD DR LONDON	57	1	1	1	1	1	3	4	0	0	0	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	51	1	1	1	1	1	10	15	1	0	0	0
26029	EDNA/FREDERICK STS KITCHENER	56	1	1	1	1	1	2	2	0	0	0	0
27008	71 KING ST ST CATHARINES	54	1	1	1	1	1	1	1	0	0	0	0

TABLE A-33 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - CADMIUM IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES & CRITERIA 24-HR	% ABOVE 24-HR
29011	BURLINGTON/LEEDS HAMILTON	61	1	1	2	3	4	8	9	2	1	0	0
29012	BURLINGTON/WELLINGTON HAMILTON	60	1	1	1	1	2	3	4	0	0	0	0
29017	CHATHAM/FRID HAMILTON	55	1	1	1	1	2	5	7	0	0	0	0
29025	BARTON/WENTWORTH HAMILTON	59	1	1	1	2	4	7	8	1	1	0	0
29067	450 HUGHSON ST N HAMILTON	60	1	1	1	1	1	2	2	0	0	0	0
29098	BAY/MAIN ST HAMILTON	60	1	1	1	1	2	4	4	1	0	0	0
29102	467 BEACH BLVD HAMILTON	59	1	1	1	2	4	25	25	3	1	0	0
29114	VICKERS RD/EAST 18TH ST HAMILTON	56	1	1	1	1	2	3	3	0	0	0	0
31045	BRUCE PS, 51 LARCHMOUNT AV TORONTO	302	1	1	1	2	4	9	13	1	1	0	0
31058	MOSLEY/LESLIE STS TORONTO	273	1	1	1	2	5	13	23	2	1	0	0
31065	633 EASTERN AV TORONTO	322	1	1	1	2	4	12	20	2	1	0	0
31085	TECUMSETH/NIAGARA ST TORONTO	307	1	1	1	1	2	7	8	1	0	0	0
31104	26 BREADALBANE TORONTO	356	1	1	1	1	2	6	72	1	1	0	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	57	1	1	1	2	3	15	16	2	1	0	0
31181	60 BATHURST ST TORONTO	221	1	1	1	1	2	3	6	0	0	0	0
31183	FORT YORK TORONTO	315	1	1	1	1	2	4	8	1	0	0	0
44005	2487 LAKESHORE E/BIRKBANK RDS OAKVILLE	256	1	1	25	25	25	100	130	18	4	0	0
48140	CON 5 (BROWN PROP) RAVENSHOE	65	25	25	25	25	70	103	130	34	30	0	0
48141	RR2 (INGHAM PROP) KESWICK	55	25	25	25	44	70	99	110	38	34	0	0
48142	RR2 (CALDERARO PROP) KESWICK	70	25	25	25	25	61	113	120	34	30	0	0
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	58	1	1	1	1	1	1	1	0	0	0	0
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	57	1	1	1	1	1	1	1	0	0	0	0
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	5	25	25	25	50	71	79	80	43	38	0	0
75010	OPP STN NORTH BAY	46	1	1	1	1	1	1	1	0	0	0	0
77016	WATER TANK, ASH ST SUDBURY	47	1	1	2	2	5	11	12	2	1	0	0
77026	19 LISGAR ST SUDBURY	53	1	1	1	1	3	7	8	1	0	0	0

TABLE A-33 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - CADMIUM IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
77070	PUMPHOUSE NICKEL ST SUDBURY	50	1	1	1	4	16	36	39	5	1	0

TABLE A-34 VANADIUM (V) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - VANADIUM IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	5	5	5	10	10	38	50	8	7	0
12005	7730 RIVERSIDE DR E WINDSOR	57	5	5	5	10	20	68	80	10	7	0
12008	467 UNIVERSITY AV W WINDSOR	318	5	5	5	10	20	68	80	11	8	0
12010	SEWAGE STN, HANNING RD WINDSOR	58	5	5	5	10	20	24	30	9	7	0
12011	DROUILLARD RD/RICHMOND ST WINDSOR	57	5	5	5	10	20	30	30	10	8	0
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	53	5	5	5	5	17	24	30	7	6	0
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	60	5	5	5	10	20	34	40	8	7	0
12038	2885 HOWARD AV WINDSOR	57	5	5	5	5	20	24	30	9	7	0
12039	DOUGLAS ST/E.C. ROW W WINDSOR	60	5	5	5	5	11	27	40	8	6	0
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	51	5	5	5	10	20	30	30	9	7	0
12049	643 ALEXANDRINE WINDSOR	59	5	5	5	8	20	20	20	8	7	0
12051	604 CAPITOL/REMINGTON WINDSOR	55	5	5	5	5	10	28	40	8	6	0
13003	POST OFFICE, 10 CENTRE ST CHATHAM	59	5	5	5	5	20	37	50	9	7	0
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	340	5	5	5	10	30	140	320	16	9	0
14030	RR1 (W OF HOUSE) CORUNNA	51	5	5	5	10	30	40	40	11	8	0
14031	RR1 (W OF BARN) MOORETOWN	52	5	5	5	10	20	40	40	9	7	0
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	56	5	5	5	10	30	124	160	17	9	0
15001	MRN FAIR GROUNDS, KING/RECTORY LONDON	59	5	5	5	5	20	27	40	8	7	0
15009	LONGWOODS CONSERVATION LONGWOODS	58	5	5	5	5	10	24	30	7	6	0
15014	POND MILLS RD/DEVERON CRES LONDON	60	5	5	5	5	10	34	40	8	6	0
15015	951 COMMISSIONERS RD E LONDON	59	5	5	5	5	10	30	30	7	6	0
15016	801 COMMISSIONERS RD E LONDON	59	5	5	5	5	20	34	40	8	7	0
15017	8 MOUNTSFIELD DR LONDON	57	5	5	5	10	30	34	40	11	8	0
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	51	5	5	5	10	20	46	70	9	7	0
26029	EDNA/FREDERICK STS KITCHENER	56	5	5	5	5	10	20	20	7	6	0
27008	71 KING ST ST CATHARINES	54	5	5	5	5	20	24	30	8	7	0

TABLE A-34 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - VANADIUM IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
29011	BURLINGTON/LEEDS HAMILTON	61	5	5	5	10	20	40	60	11	9	0
29012	BURLINGTON/WELLINGTON HAMILTON	60	5	5	5	5	20	58	100	10	7	0
29017	CHATHAM/FRID HAMILTON	55	5	5	5	9	20	44	70	9	7	0
29025	BARTON/WENTWORTH HAMILTON	59	5	5	5	10	20	40	40	10	8	0
29067	450 HUGHSON ST N HAMILTON	60	5	5	5	5	20	24	30	8	7	0
29098	BAY/MAIN ST HAMILTON	60	5	5	5	5	10	20	20	7	6	0
29102	467 BEACH BLVD HAMILTON	59	5	5	5	10	21	44	50	10	7	0
29114	VICKERS RD/EAST 18TH ST HAMILTON	56	5	5	5	5	10	24	30	7	6	0
31045	BRUCE PS, 51 LARCHMOUNT AV TORONTO	302	5	5	5	5	10	30	40	7	6	0
31058	MOSLEY/LESLIE STS TORONTO	273	5	5	5	10	20	30	40	9	7	0
31065	633 EASTERN AV TORONTO	322	5	5	5	10	20	30	50	8	7	0
31085	TECUMSETH/NIAGARA ST TORONTO	307	5	5	5	5	20	30	50	8	7	0
31104	26 BREADALBANE TORONTO	356	5	5	5	5	10	20	20	7	6	0
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	57	5	5	5	5	10	24	30	7	6	0
31181	60 BATHURST ST TORONTO.	221	5	5	5	10	20	40	40	10	8	0
31183	FORT YORK TORONTO	315	5	5	5	10	20	48	60	10	8	0
44005	2487 LAKESHORE E/BIRKBANK RDS OAKVILLE	256	2	5	5	5	10	25	59	6	5	0
48140	CON 5 (BROWN PROP) RAVENSHOE	65	2	2	2	2	8	29	45	4	3	0
48141	RR2 (INGHAM PROP) KESWICK	55	2	2	2	2	7	17	39	3	3	0
48142	RR2 (CALDERARO PROP) KESWICK	70	2	2	2	2	6	24	51	4	3	0
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	58	5	5	5	5	12	30	30	8	7	0
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	57	5	5	5	5	10	30	30	7	6	0
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	5	2	3	16	39	54	58	58	25	11	0
75010	OPP STN NORTH BAY	46	5	5	5	5	10	25	30	7	6	0
77016	WATER TANK, ASH ST SUDBURY	47	5	5	5	5	5	7	10	5	5	0
77026	19 LISGAR ST SUDBURY	53	5	5	5	5	5	10	10	5	5	0

TABLE A-34 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - VANADIUM IN TOTAL SUSPENDED PARTICULATE UNIT - .001 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN	TIMES ABOVE CRITERIA 24-HR
77070	PUMPHOUSE NICKEL ST SUDBURY	50	5	5	5	5	10	20	20	6	6	0

TABLE A-35 MAXIMUM MONITORED LEVELS FOR TRACE METALS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANTS - CHROMIUM IN TSP UNIT - .001 UG/M3 NICKEL IN TSP UNIT - .001 UG/M3
IRON IN TSP UNIT .1 UG/M3 VANADIUM IN TSP UNIT - .001 UG/M3
CADMIUM IN TSP UNIT - .001 UG/M3 MANGANESE IN TSP UNIT - .001 UG/M3

STATION NUMBER	LOCATION	NO OF SAMPLES	CR MAX	VV MAX	FE MAX	NI MAX	CD MAX	MN MAX
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	100	50	28	320	8	200
12005	7730 RIVERSIDE DR E WINDSOR	57	20	80	29	20	7	160
12007	WRIGHT/WATER ST WINDSOR	54	N/A	N/A	137	N/A	N/A	N/A
12008	467 UNIVERSITY AV W WINDSOR	318	80	80	65	340	25	260
12010	SEWAGE STN, HANNING RD WINDSOR	58	10	30	15	10	4	80
12013	FILTRAT PLT,3665 WYANDOTTE ST E WINDSOR	53	43	30	159	80	7	840
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	60	20	40	71	40	28	380
12016	COLLEGE/SOUTH ST WINDSOR	56	N/A	N/A	73	N/A	N/A	N/A
12038	2885 HOWARD AV WINDSOR	57	90	30	237	120	8	290
12039	DOUGLAS ST/E.C ROW W WINDSOR	60	20	40	62	60	14	160
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	51	30	30	36	50	12	110
12049	643 ALEXANDRINE WINDSOR	59	10	20	46	20	11	110
12051	604 CAPITOL/REMINGTON WINDSOR	55	60	40	53	10	12	130
13003	POST OFFICE, 10 CENTRE ST CHATHAM	59	20	50	21	10	3	70
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	340	40	320	36	50	3	50
14030	RR1 (W OF HOUSE) CORUNNA	51	20	40	17	10	80	60
14031	RR1 (W OF BARN) MOORETOWN	52	5	40	14	10	2	40
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	56	20	160	19	40	2	40
14152	CHRISTINA/EXMOUTH ST SARNIA	66	N/A	N/A	22	N/A	N/A	140
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	59	50	40	26	10	5	210
15009	LONGWOODS CONSERVATION AUTHORITY LONGWOODS	58	40	30	34	10	1	100
15014	POND MILLS RD/DEVERON CRES LONDON	60	10	40	28	20	2	90
15015	951 COMMISSIONERS RD. E LONDON	59	20	30	23	30	2	70
15016	801 COMMISSIONERS RD. E LONDON	59	30	40	20	30	1	70

TABLE A-35 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANTS - CHROMIUM IN TSP UNIT - .001 UG/M3 NICKEL IN TSP UNIT - .001 UG/M3
IRON IN TSP UNIT - .1 UG/M3 VANADIUM IN TSP UNIT - .001 UG/M3
CADMIUM IN TSP UNIT - .001 UG/M3 MANGANESE IN TSP UNIT - .001 UG/M3

STATION NUMBER	LOCATION	NO OF SAMPLES	CR MAX	VV MAX	FE MAX	NI MAX	CD MAX	MN MAX
15017	8 MOUNTSFIELD DR. LONDON	57	20	40	18	30	4	80
22907	RAINHAM RD (NEAR STELCO GATE) NANTICOKE	51	50	70	96	30	15	530
26029	EDNA/FREDERICK STS KITCHENER	56	30	20	22	10	2	200
27008	71 KING ST ST CATHARINES	54	20	30	32	40	1	110
27047	DAVIS/FRASER ST PORT COLBORNE	57	N/A	N/A	N/A	3360	N/A	N/A
29011	BURLINGTON/LEEDS HAMILTON	61	70	6	145	20	9	1140
29012	BURLINGTON/WELLINGTON HAMILTON	60	50	100	54	70	4	1450
29017	CHATHAM/FRID HAMILTON	55	50	70	61	20	7	60
29025	BARTON/WENTWORTH HAMILTON	59	70	40	161	30	8	3950
29067	450 HUGHSON ST N HAMILTON	59	30	30	56	10	2	440
29098	BAY/MAIN ST HAMILTON	60	80	20	72	10	4	900
29102	467 BEACH BLVD HAMILTON	59	58	50	160	24	25	730
29114	VICKERS RD/EAST 18TH ST HAMILTON	56	50	30	77	50	3	500
31045	BRUCE,PS, 51 LARCHMOUNT AV TORONTO	302	50	40	88	20	13	340
31058	MOSLEY/LESLIE ST TORONTO	273	50	40	87	40	23	460
31065	633 EASTERN AVST TORONTO	322	290	50	74	40	20	390
31085	TECUMSETH/NIAGARA ST TORONTO	307	60	50	250	380	8	340
31104	26 BREADALBANE TORONTO	356	60	20	85	80	72	220
31120	PERTH/RUSKIN(JUNCTION TRIANGLE) TORONTO	57	20	30	30	10	16	150
31181	60 BATHURST ST TORONTO	221	60	40	124	80	6	290
31183	FORT YORK TORONTO	315	70	60	71	50	8	270
44005	2487 LAKESHORE E/BURBANK AV OAKVILLE	256	40	59	64	35	130	130
48140	CON 5 (BROWN PROP) RAVENSHOE	65	53	45	61	32	N/A	180

TABLE A-35 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANTS - CHROMIUM IN TSP UNIT - .001 UG/M3 NICKEL IN TSP UNIT - .001 UG/M3
IRON IN TSP UNIT - .1 UG/M3 VANADIUM IN TSP UNIT - .001 UG/M3
CADMIUM IN TSP UNIT - .001 UG/M3 MANGANESE IN TSP UNIT - .001 UG/M3

STATION NUMBER	LOCATION	NO OF SAMPLES	CR MAX	VV MAX	FE MAX	NI MAX	CD MAX	MN MAX
48141	RR2 (INGHAM PROP) KESWICK	55	36	39	50	33	N/A	150
48142	RR2 (CALDERARO PROP) KESWICK	70	57	51	66	52	120	N/A
61016	98 DICKENSON ROAD BALMERTON	14	N/A	N/A	31	N/A	N/A	N/A
61017	DICKENSON MINES LTD BALMERTON	14	N/A	N/A	393	N/A	N/A	N/A
63005	HOSP, ARCHIBALD/ARTHUR ST THUNDER BAY	58	10	30	50	5	1	180
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	57	20	30	53	5	1	150
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	348	140	58	1200	50	80	2690
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	49	20	N/A	73	10	N/A	350
71068	WM. MERRIFIELD SCHOOL SAULT STE MARIE	105	N/A	N/A	136	10	N/A	1010
71072	FIRST AV/SECOND LINE SAULT STE MARIE	92	20	N/A	52	5	N/A	410
75010	OPP STN NORTH BAY	46	20	30	14	10	1	60
77016	WATER TANK, ASH ST SUDBURY	47	10	10	72	2370	12	30
77026	19 LISGAR ST SUDBURY	53	250	10	36	710	8	80
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	50	30	20	102	4360	38	N/A

TABLE A-36 NITRATE (NO_3^-) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - NITRATE IN TOTAL SUSPENDED PARTICULATE UNIT - .1 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	9	17	23	35	63	97	128	31	23
12008	467 UNIVERSITY AV W WINDSOR	318	24	39	55	73	98	165	203	59	51
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	59	15	23	37	47	77	163	173	43	34
12038	2885 HOWARD AV WINDSOR	57	18	28	49	64	92	148	157	52	43
12039	DOUGLAS ST/E.C. ROW W WINDSOR	60	15	25	35	52	67	100	104	40	34
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	51	11	27	40	58	78	97	99	43	35
12049	643 ALEXANDRINE WINDSOR	59	11	19	30	37	48	95	98	31	26
12051	604 CAPITOL/REMINGTON WINDSOR	55	9	15	22	37	57	130	134	31	23
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	340	15	26	39	57	86	134	195	46	37
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	56	8	23	33	44	78	134	157	39	30
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	59	16	24	46	64	83	143	154	49	39
15014	POND MILLS RD/DEVERON CRES LONDON	60	20	39	56	68	98	153	166	58	50
15015	951 COMMISSIONERS RD E LONDON	59	16	28	47	66	96	148	153	52	40
15016	801 COMMISSIONERS RD E LONDON	59	15	26	46	57	76	123	140	46	37
15017	8 MOUNTSFIELD DR LONDON	57	23	43	51	64	103	165	179	59	48
22904	WALPOLE S PS, SANDUSK RD NANTICOKE	45	17	30	48	65	83	127	140	50	37
26029	EDNA/FREDERICK STS KITCHENER	56	16	29	50	65	89	117	118	51	42
27008	71 KING ST ST CATHARINES	54	22	35	45	62	84	111	138	50	43
27056	ALLENDALE AV NIAGARA FALLS	52	22	32	41	58	71	102	103	46	41
28028	EXHIBITION ST/CLARK ST GUELPH	58	12	26	42	59	78	123	132	46	36
29011	BURLINGTON/LEEDS HAMILTON	61	17	32	40	54	83	109	144	45	38
29012	BURLINGTON/WELLINGTON HAMILTON	60	18	32	45	60	81	115	130	49	41
29017	CHATHAM/FRID HAMILTON	55	14	31	48	63	89	135	164	50	40
29025	BARTON/WENTWORTH HAMILTON	59	23	36	55	69	87	130	134	56	47
29087	405 CUMBERLAND AV HAMILTON	61	10	21	31	40	69	88	95	34	28
29098	BAY/MAIN ST HAMILTON	60	16	29	39	58	90	113	132	47	39

TABLE A-36 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - NITRATE IN TOTAL SUSPENDED PARTICULATE UNIT - .1 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN
29102	467 BEACH BLVD HAMILTON	59	21	33	47	65	82	104	108	50	43
29114	VICKERS RD/EAST 18TH ST HAMILTON	56	22	41	51	73	96	125	128	57	46
31104	26 BREADALBANE TORONTO	356	16	30	47	65	95	194	280	54	42
32010	LEASIDE HYDRO STATION EAST YORK	36	12	21	42	57	78	99	105	44	35
33003	LAWRENCE/KENNEDY SCARBORO	59	14	25	42	56	86	153	246	48	37
34020	HENDON AVE (YONGE/FINCH) NORTH YORK	48	11	23	34	46	69	123	172	39	31
34025	35 EDGAR AVE NORTH YORK WEST	51	16	23	41	53	79	140	201	45	36
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	39	12	24	43	56	84	146	180	47	36
35033	EVANS/ARNOLD AV ETOBICOKE	60	13	29	49	65	96	174	254	54	42
36030	CLEARVIEW HTGS/KEELE ST YORK	30	7	24	45	58	78	99	99	44	32
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	56	17	28	44	52	75	98	101	44	38
44015	BRONTE RD/WOBURN CRES OAKVILLE	41	19	36	52	56	76	96	100	49	41
45025	PS, RITSON RD/OLIVE AV OSHAWA	60	12	24	35	60	87	162	254	47	35
46033	FIRE HALL, BRAMALEA RD BRAMALEA	50	11	21	46	75	108	158	187	55	38
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	56	11	20	26	39	53	84	98	31	26
47019	POST OFFICE, 17-25 PETER ST S ORILLIA	17	10	22	35	44	60	69	70	35	27
47042	ARMOURY BLDG, PARK/PARKSIDE ST BARRIE	28	11	14	38	50	92	116	124	42	30
48002	HWY47/E OF HWY48 STOUFFVILLE	56	11	25	40	51	76	156	215	44	34
58027	51 SHUTER ST PORT HOPE	68	10	21	28	47	71	91	106	36	28
58041	FILT PLT, MARSH ST PORT HOPE	71	11	22	34	44	65	90	91	36	29
58042	CAN TIRE, QUEEN ST PORT HOPE	69	7	20	26	39	66	113	168	34	25
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	58	6	8	13	17	29	58	64	16	13
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	57	5	7	10	16	31	67	78	15	11
63200	MTC 615 JAMES ST S THUNDER BAY	56	5	8	11	17	31	63	72	16	12
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	348	4	8	13	22	46	106	182	20	13
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	49	2	5	6	11	18	58	73	11	6

TABLE A-36 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - NITRATE IN TOTAL SUSPENDED PARTICULATE UNIT - .1 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN
71068	WM. MERRIFIELD SCHOOL SAULT STE MARIE	105	6	8	11	17	34	53	54	16	12
71072	FIRST AV/SECOND LINE SAULT STE MARIE	92	5	7	12	19	37	62	87	17	12
75010	OPP STN NORTH BAY	46	5	9	13	24	58	90	90	23	15
77016	WATER TANK, ASH ST SUDBURY	47	2	3	5	7	9	43	44	7	4
77026	19 LISGAR ST SUDBURY	53	5	8	11	19	33	56	67	16	12
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	50	2	3	5	10	23	57	67	10	5

TABLE A-37 10-YEAR TREND FOR NO_3^-

Annual geometric mean (ug/m3)

City	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
BRAMALEA	2.9	3.0	4.3	3.8	3.8	3.6	3.7	3.3	4.0	3.8
ETOBICOKE	4.6	4.9	4.9	3.3	3.7	3.0	3.8	2.8	3.1	3.6
HAMILTON	3.8	3.4	3.7	3.7	3.8	3.5	3.8	3.9	3.7	4.7
KITCHENER	3.7	3.4	3.7	3.1	3.3	2.8	3.3	3.2	1.8	4.2
LONDON	4.5	3.5	3.6	3.3	3.6	3.3	3.6	3.9	2.3	3.9
MISSISSAUGA	3.1	3.5	4.0	4.1	3.8	3.5	3.0	2.9	1.8	2.6
NORTH BAY	1.4	1.2	1.2	1.2	1.1	1.0	.9	.9	1.3	1.5
NORTH YORK *	3.3	3.1	3.2	3.1	3.3	3.1	2.7	2.8	2.9	3.1
OSHAWA	3.2	3.3	3.2	3.0	3.5	2.9	3.0	3.2	2.1	3.5
PORT HOPE	2.7	2.5	4.2	2.3	4.3	3.0	1.7	2.8	2.5	2.8
S.S.MARIE	1.4	1.5	1.2	1.3	1.2	1.0	.9	.9	1.4	1.2
SCARBOROUGH	3.4	3.0	3.3	3.2	3.6	3.2	3.1	2.8	1.9	3.7
SUDBURY	1.2	1.6	1.1	1.3	.9	.8	.6	1.0	0.8	0.4
THUNDER BAY	1.2	1.5	1.2	.7	.9	.8	.9	1.0	1.1	1.3
TORONTO	3.7	3.7	3.8	3.6	3.5	3.5	3.4	3.3	3.1	4.2
WINDSOR	5.5	5.8	4.4	4.1	3.5	3.9	2.9	4.4	4.1	2.3

* change of location from Science Centre (34002) to Yonge/Finch (34020)

TABLE A-38 SULPHATE (SO^{2}_{4}) STATISTICS (1989)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - SULPHATE IN TOTAL SUSPENDED PARTICULATE UNIT - .1 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN
12002	CITY HALL, 444 WINDSOR AV WINDSOR	53	38	53	72	114	172	311	426	97	79
12008	467 UNIVERSITY AV W WINDSOR	318	55	75	89	116	177	306	336	106	95
12015	SEWAGE STN, HWY 18/PROSPECT WINDSOR	60	50	67	81	138	195	334	418	111	93
12038	2885 HOWARD AV WINDSOR	57	74	89	104	136	165	221	233	114	108
12039	DOUGLAS ST/E.C. ROW W WINDSOR	60	41	56	70	104	164	261	303	92	79
12047	DORWIN PLAZA, DOUGALL AV WINDSOR	51	39	56	82	116	169	258	314	96	81
12049	643 ALEXANDRINE WINDSOR	59	36	48	58	96	145	225	271	80	68
12051	604 CAPITOL/REMINGTON WINDSOR	55	35	51	65	98	139	214	260	80	68
14016	HWY40 (OPP LAMBTON GS) COURTRIGHT	340	52	71	84	105	162	256	409	97	88
14064	CENTENNIAL PK,FRONT ST/CN TRACKS SARNIA	56	50	61	74	88	141	230	337	85	75
15001	WRN FAIR GROUNDS, KING/RECTORY LONDON	59	41	56	73	118	167	284	394	94	80
15014	POND MILLS RD/DEVERON CRES LONDON	60	63	76	90	116	156	201	235	101	94
15015	951 COMMISSIONERS RD E LONDON	59	47	68	80	106	159	276	404	95	84
15016	801 COMMISSIONERS RD E LONDON	59	39	60	71	90	148	244	299	84	74
15017	8 MOUNTSFIELD DR LONDON	57	56	70	84	116	164	307	415	102	91
22904	WALPOLE S PS, SANDUSK RD NANTICOKE	45	58	81	103	116	138	191	203	101	95
26029	EDNA/FREDERICK STS KITCHENER	56	50	74	93	113	168	228	239	101	91
27008	71 KING ST ST CATHARINES	54	50	72	81	97	168	231	268	94	85
27056	ALLENDALE AV NIAGARA FALLS	52	60	82	94	116	161	235	243	105	98
28028	EXHIBITION ST/CLARK ST GUELPH	58	48	63	76	101	128	211	240	86	78
29011	BURLINGTON/LEEDS HAMILTON	61	60	80	105	143	198	258	304	118	106
29012	BURLINGTON/WELLINGTON HAMILTON	60	58	73	89	115	166	224	227	102	93
29017	CHATHAM/FRID HAMILTON	55	59	83	98	130	183	236	253	109	98
29025	BARTON/WENTWORTH HAMILTON	59	70	90	108	146	208	338	352	129	117
29087	405 CUMBERLAND AV HAMILTON	61	43	56	69	91	130	187	192	80	71
29098	BAY/MAIN ST HAMILTON	60	45	78	97	131	187	244	265	109	96

TABLE A-38 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - SULPHATE IN TOTAL SUSPENDED PARTICULATE UNIT - .1 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN
29102	467 BEACH BLVD HAMILTON	59	68	103	127	153	205	282	311	132	121
29114	VICKERS RD/EAST 18TH ST HAMILTON	56	62	96	117	148	201	301	367	127	110
31104	26 BREADALBANE TORONTO	356	44	67	84	102	150	291	344	93	83
32010	LEASIDE HYDRO STATION EAST YORK	36	45	64	84	101	153	197	211	91	82
33003	LAWRENCE/KENNEDY SCARBORO	59	47	70	84	103	141	284	310	95	84
34020	HENDON AVE (YONGE/FINCH) NORTH YORK	48	35	52	63	82	132	178	191	74	65
34025	35 EDGAR AVE NORTH YORK WEST	51	52	63	74	86	135	190	191	85	78
35003	ELMCREST RD (CENTENNIAL PK) ETOBICOKE	39	42	70	85	108	143	169	171	91	83
35033	EVANS/ARNOLD AV ETOBICOKE	60	64	77	96	118	171	236	238	107	99
36030	CLEARVIEW HTGS/KEELE ST YORK	30	24	65	93	111	147	204	221	92	73
44008	HWY2/NORTH SHORE BLVD E BURLINGTON	56	46	74	86	99	184	288	410	99	87
44015	BRONTE RD/HOBURN CRES OAKVILLE	41	59	80	99	119	153	297	315	110	93
45025	PS, RITSON RD/OLIVE AV OSHAWA	60	62	74	87	105	148	238	276	99	92
46033	FIRE HALL, BRAMALEA RD BRAMALEA	50	40	63	84	123	172	219	219	97	82
46110	QUEENSWAY W/HURONTARIO ST MISSISSAUGA	56	35	43	57	81	116	173	194	69	61
47019	POST OFFICE, 17-25 PETER ST S ORILLIA	17	50	60	74	81	91	117	121	72	69
47042	ARMOURY BLDG, PARK/PARKSIDE ST BARRIE	28	53	63	75	88	113	150	156	78	73
48002	HWY47/E OF HWY48 STOUFFVILLE	56	34	55	68	78	117	215	216	76	67
58027	51 SHUTER ST PORT HOPE	68	29	45	66	93	159	222	280	80	65
58041	FILT PLT, MARSH ST PORT HOPE	71	27	42	69	110	177	222	292	85	67
58042	CAN TIRE, QUEEN ST PORT HOPE	69	27	45	70	104	175	227	238	85	68
63005	HOSP, ARCHIBALD/ARTHUR STS THUNDER BAY	58	28	38	45	54	97	111	112	52	47
63022	HOSPITAL, 35 ALGOMA ST N THUNDER BAY	57	21	33	40	51	93	152	216	50	42
63200	MTC 615 JAMES ST S THUNDER BAY	56	23	36	43	49	86	166	272	51	44
71042	PUMPHOUSE, BONNEY ST SAULT STE MARIE	348	31	51	74	109	195	320	456	94	74
71049	LAND OFFICE, QUEEN ST SAULT STE MARIE	49	19	29	39	63	105	201	218	55	44

TABLE A-38 (CONT.)

ONTARIO MINISTRY OF THE ENVIRONMENT - AIR RESOURCES BRANCH

YEAR - 1989 POLLUTANT - SULPHATE IN TOTAL SUSPENDED PARTICULATE UNIT - .1 MICROGRAMS/CU.METRE

STATION NUMBER	LOCATION	NO OF SAMPLES	PERCENTILES 10	30	50	70	90	99	MAX	ARITH MEAN	GEOM MEAN
71068	MM. MERRIFIELD SCHOOL SAULT STE MARIE	105	25	39	50	70	109	213	227	63	52
71072	FIRST AV/SECOND LINE SAULT STE MARIE	92	26	36	53	70	119	214	225	63	52
75010	OPP STN NORTH BAY	46	39	63	76	89	130	211	214	82	74
77016	WATER TANK, ASH ST SUDBURY	47	24	29	38	55	108	165	167	53	43
77026	19 LISGAR ST SUDBURY	53	33	57	73	84	166	225	234	81	70
77070	PUMPHOUSE, NICKEL ST COPPER CLIFF	50	27	36	54	69	92	188	212	61	52

TABLE A-39 10-YEAR TREND FOR SO^{2-}_4

Annual geometric mean (ug/m3)

City	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
BRAMALEA	9.0	8.2	8.8	9.0	10.8	7.7	8.8	7.7	9.7	8.2
ETOBICOKE	13.8	12.1	11.3	8.8	9.3	7.7	8.7	8.2	8.4	8.3
HAMILTON	12.5	9.6	9.6	10.1	10.9	8.8	11.5	13.0	10.9	11.7
KITCHENER	11.4	9.9	8.5	7.0	7.7	5.7	7.6	9.8	5.8	9.1
LONDON	10.7	8.1	7.9	7.3	8.7	6.9	7.5	9.4	5.9	8.0
MISSISSAUGA	10.3	10.3	9.5	10.0	10.7	7.1	7.1	9.2	6.1	6.1
NORTH BAY	8.2	6.6	6.3	6.6	7.1	6.0	4.5	7.2	8.3	7.4
NORTH YORK *	11.7	9.1	8.8	8.0	7.3	7.7	7.3	8.0	7.3	6.5
OSHAWA	10.1	9.5	8.9	8.7	8.4	7.2	8.1	10.3	6.9	9.2
PORT HOPE	7.5	7.0	5.2	5.6	7.1	6.5	5.5	7.2	7.0	6.5
SCARBOROUGH	11.7	9.1	8.6	8.4	8.2	7.0	7.7	7.8	5.6	8.4
S.S. MARIE	10.1	7.8	7.7	7.0	6.8	7.2	5.1	6.4	8.0	4.6
SUDBURY	10.6	9.8	7.3	8.5	7.4	5.2	5.8	8.2	6.3	4.4
THUNDER BAY	6.5	7.8	6.4	4.0	4.3	3.5	3.6	2.9	3.2	4.7
TORONTO	12.9	10.1	9.5	8.7	8.0	7.3	8.0	9.5	7.2	8.3
WINDSOR	12.6	12.0	9.9	8.7	8.6	8.5	10.5	11.3	10.4	7.9

* change of location from Science Centre (34002) to Yonge/Finch (34020)

TABLE A-40 STATIONS USED IN TRENDS OF GASES (1980-1989)

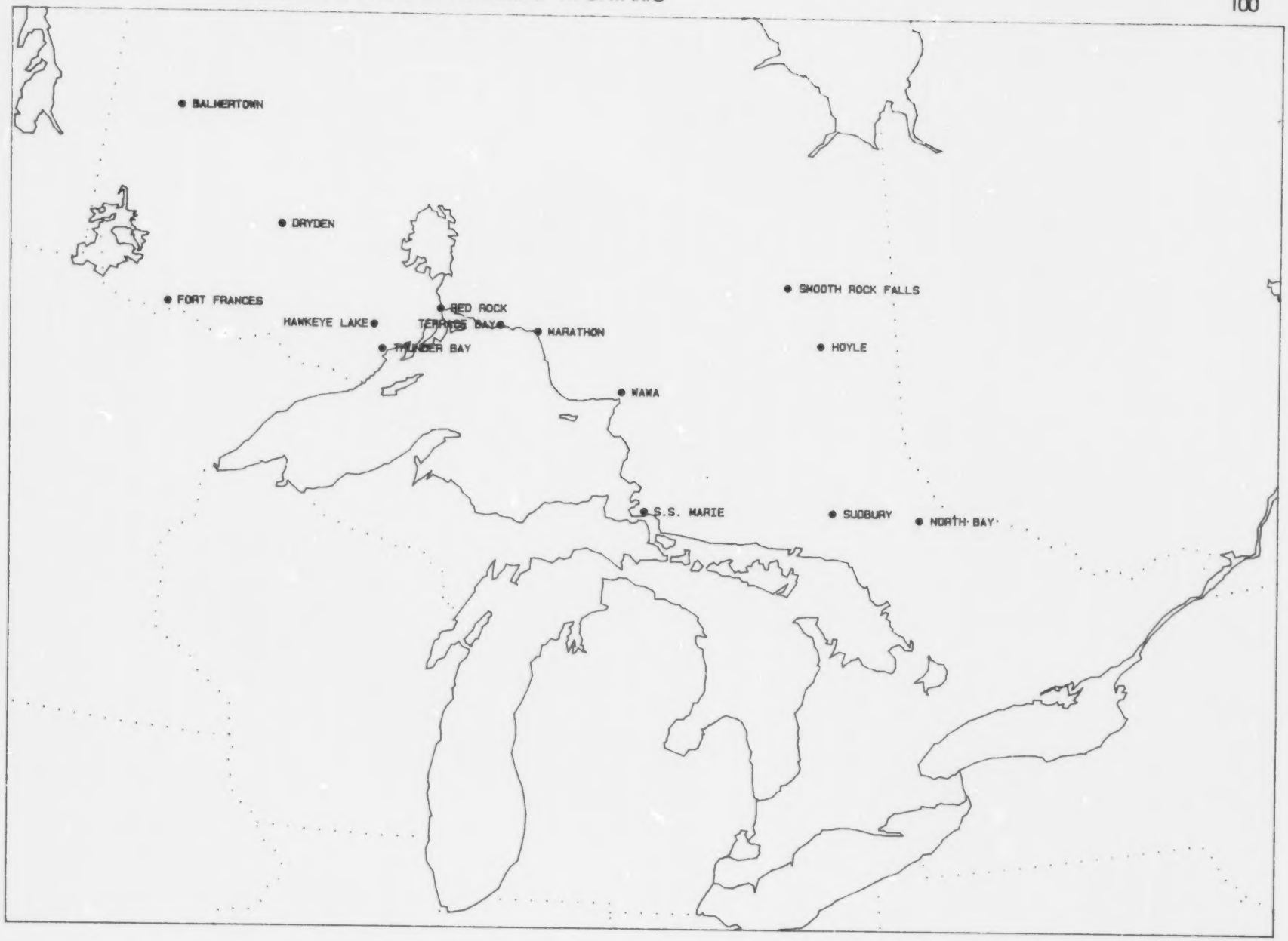
City	Station (Period)
Burlington	44008 (1980 - 1989)
Cornwall	56051 (1980 - 1989)
Etobicoke	35003 (1980 - 1989)
Fort Frances	62030 (1980 - 1989)
Hamilton	29025 (1980-1986);29000 (1987-1989)
Huron Park	10001 (1980 - 1989)
Kitchener	26029 (1980 - 1989)
London	15001 (1980 - 1989)
Long Point	22901 (1980 - 1989)
Mandaumin	14118 (1980 - 1989)
Merlin	13021 (1980 - 1989)
Niagara Falls	27049 (1980-1982);27056 (1983-1989)
North Bay	75010 (1980 - 1989)
North York	34002 (1980 - 1989)
Oakville	44015 (1980 - 1989)
Oshawa	45025 (1980 - 1989)
Ottawa	51001 (1980 - 1989)
Peterborough	59006 (1980 - 1989)
Sarnia	14064 (1980 - 1989)
Scarborough	33003 (1980 - 1989)
Simcoe	22071 (1980 - 1989)
St Catharines	27037 (1980-1986);27067 (1987-1989)
Stouffville	48002 (1980 - 1989)
Sudbury	77016 (1980-1987);77203 (1988-1989)
Thunder Bay	63040 (1980-1986);63200 (1987-1989)
Tiverton	18007 (1980 - 1989)
Toronto	31104 (1980 - 1989)
Windsor	12008 (1980 - 1989)

TABLE A-41 STATIONS USED IN TRENDS OF PARTICULATES (1980-1989)

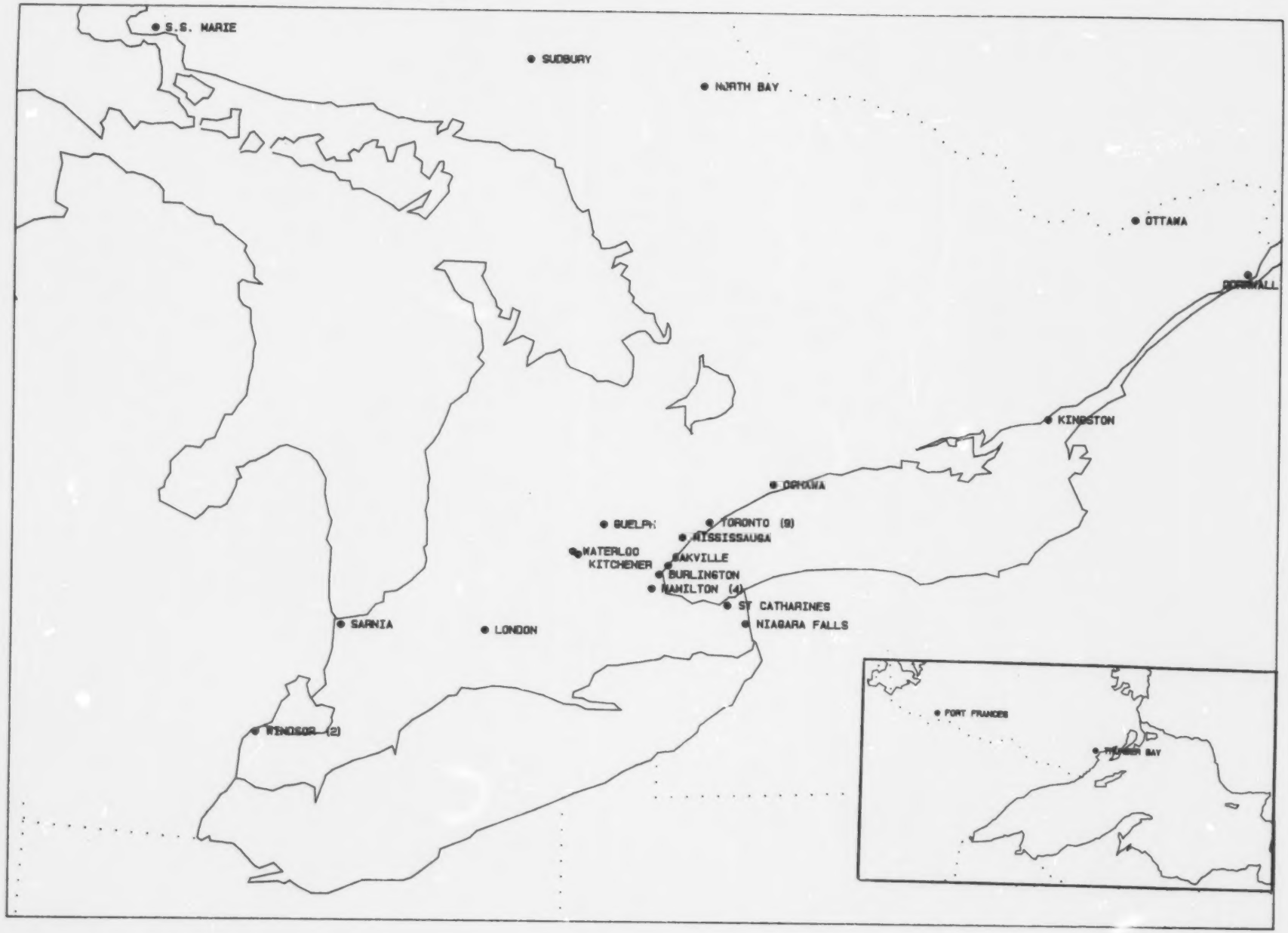
City	Station (Period)
Atikokan	62013 (1980 - 1989)
Bramalea	46033 (1980 - 1989)
Burlington	44008 (1980 - 1989)
Chatham	13003 (1980 - 1989)
Courtright	14016 (1980 - 1989)
Etobicoke	35003 (1980 - 1989)
Espanola	77029 (1980 - 1989)
Fort Frances	62032 (1980 - 1989)
Hamilton	29025 (1980 - 1989)
Jarvis	22092 (1980 - 1989)
Kitchener	26029 (1980 - 1989)
London	15001 (1980 - 1989)
Mississauga	46110 (1980 - 1989)
North Bay	75010 (1980 - 1989)
North York	34002 (1980 - 1988);34020 (1989)
Oakville	44015 (1980 - 1989)
Oshawa	45025 (1980 - 1989)
Pickering	45001 (1980 - 1989)
Port Colborne	27047 (1980 - 1989)
Port Hope	58027 (1980 - 1989)
S.S. Marie	71049 (1980 - 1989)
Sarnia	14064 (1980 - 1989)
Scarborough	33003 (1980 - 1989)
St Catharines	27008 (1980 - 1989)
St Thomas	15006 (1980 - 1989)
Sudbury	77016 (1980 - 1989)
Thunder Bay	63005 (1980 - 1989)
Toronto	31104 (1980 - 1989)
Welland	27045 (1980 - 1989)
Windsor	12002 (1980 - 1989)

MAP 1 LOCATIONS OF CONTINUOUS MONITORING STATIONS - S.ONTARIO

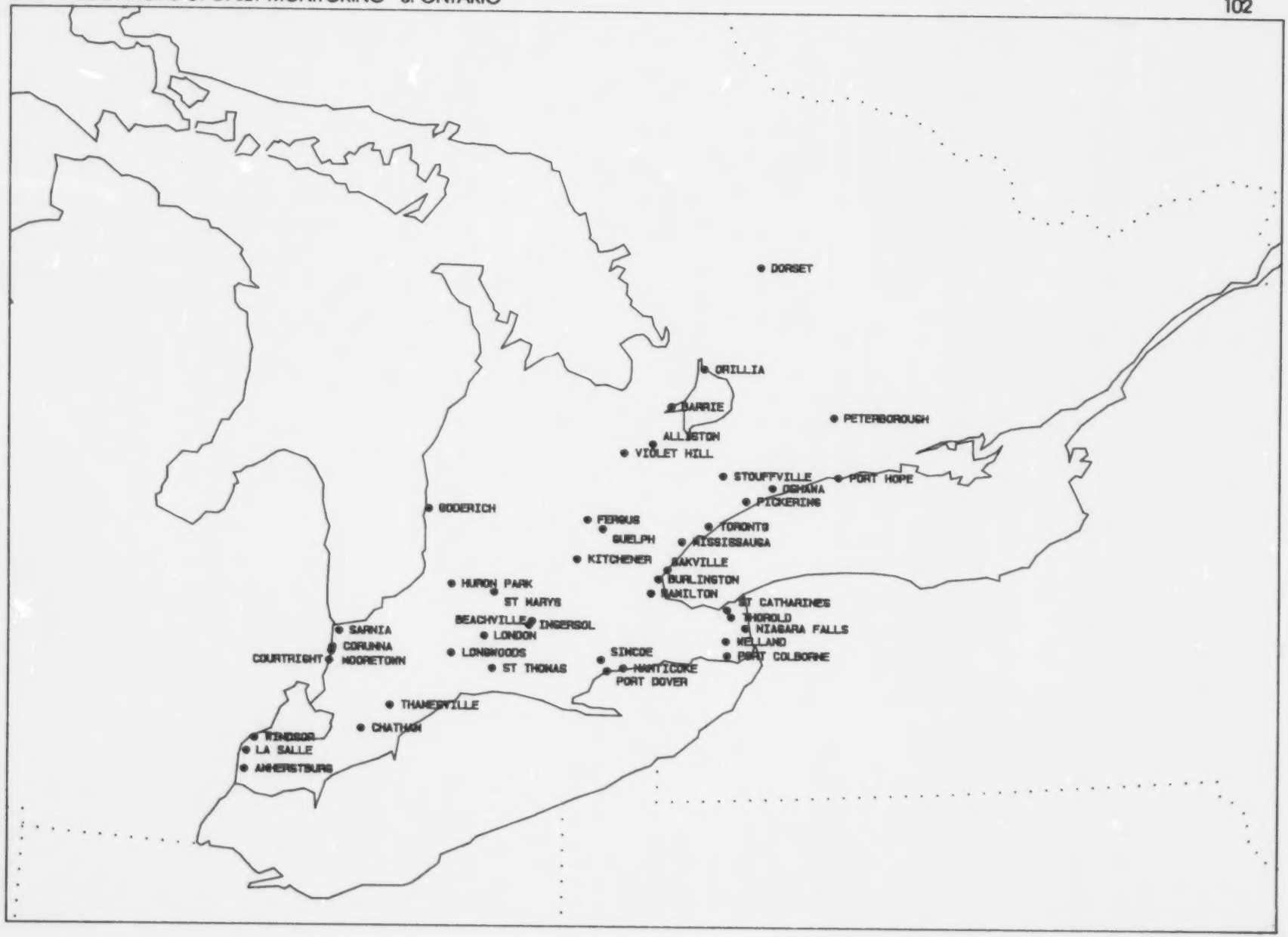
MAP 2 LOCATIONS OF CONTINUOUS MONITORING STATIONS - N. ONTARIO



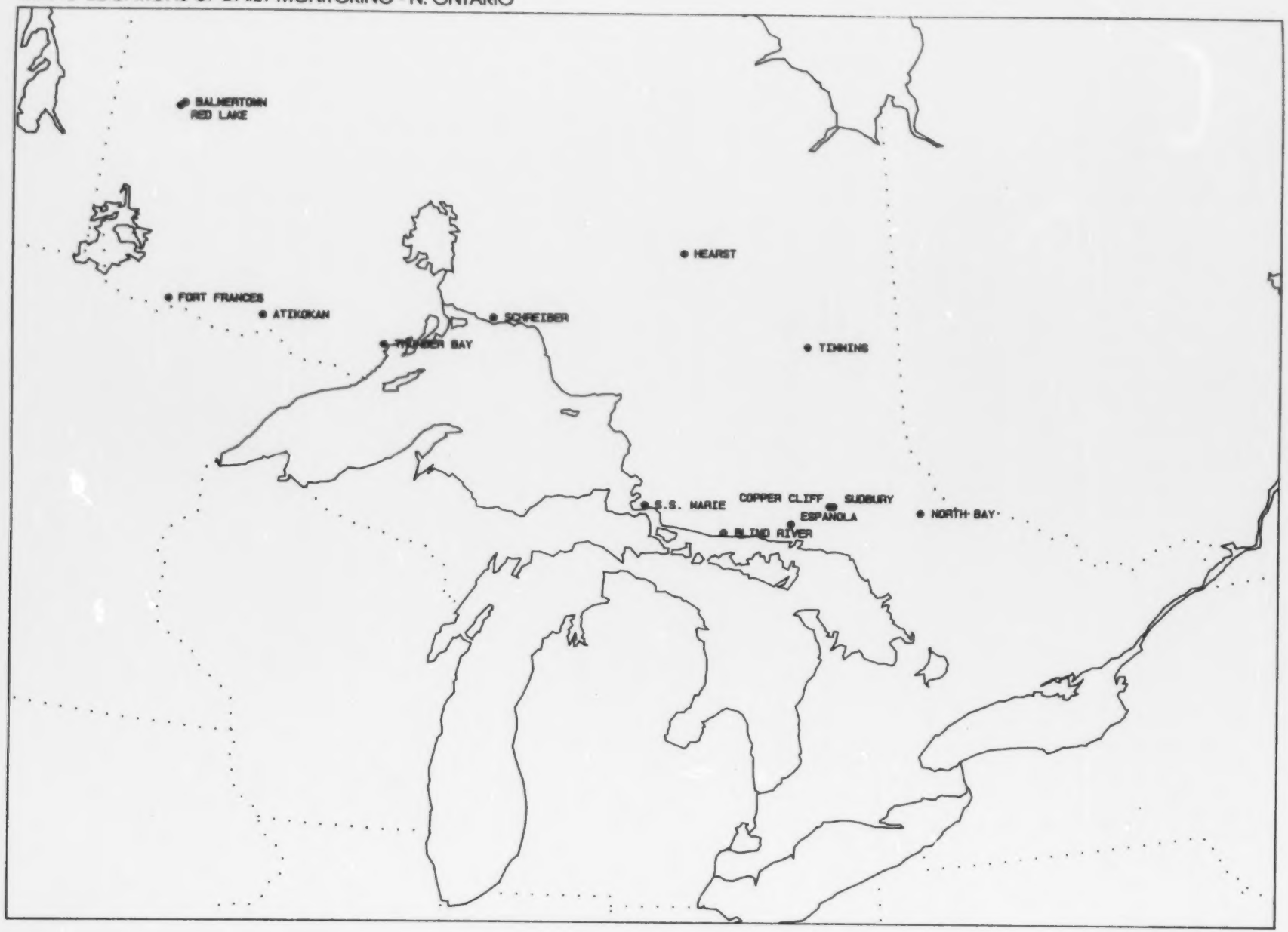
MAP 3 LOCATION OF AIR QUALITY INDEX (AQI) SITES



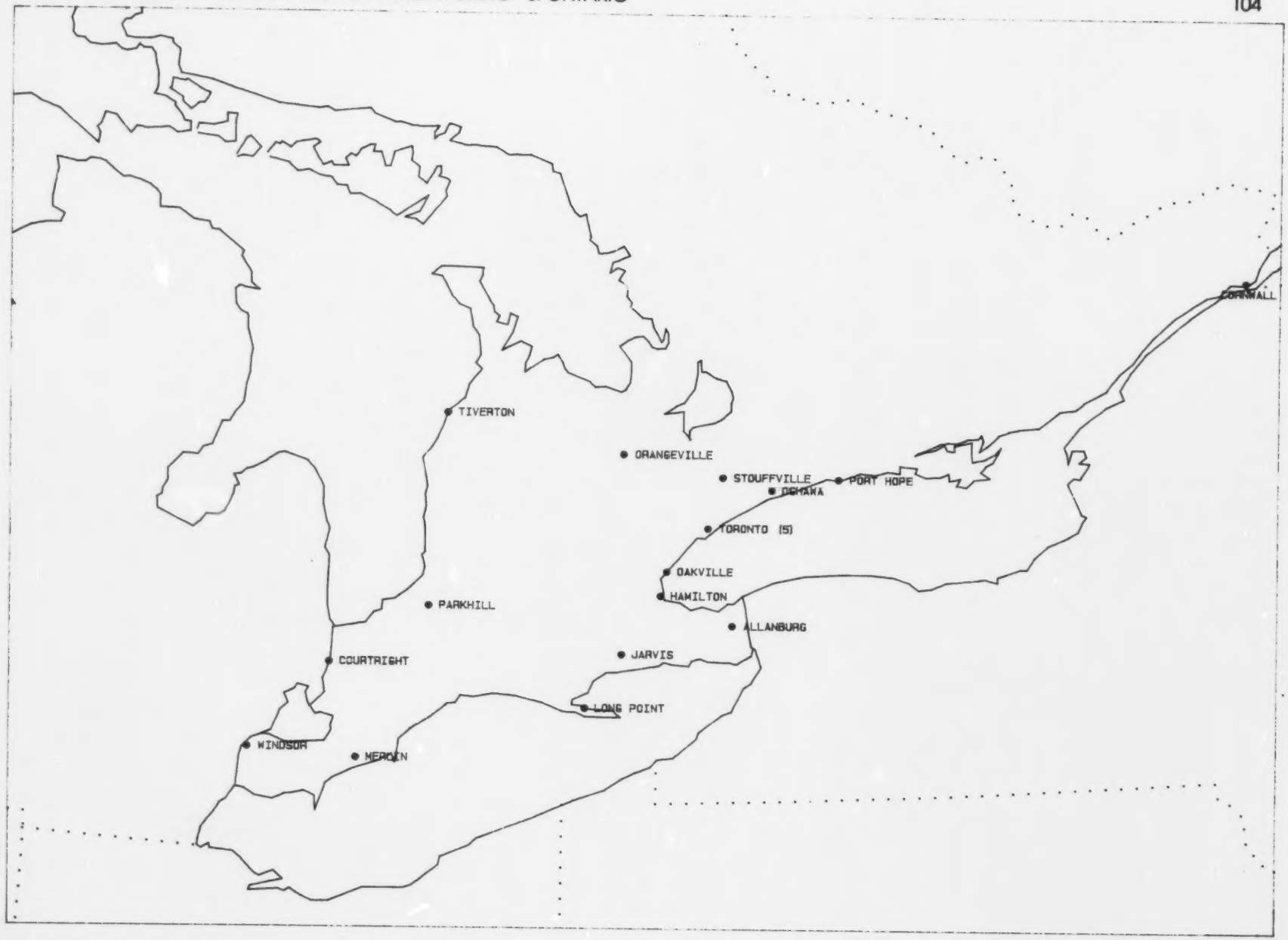
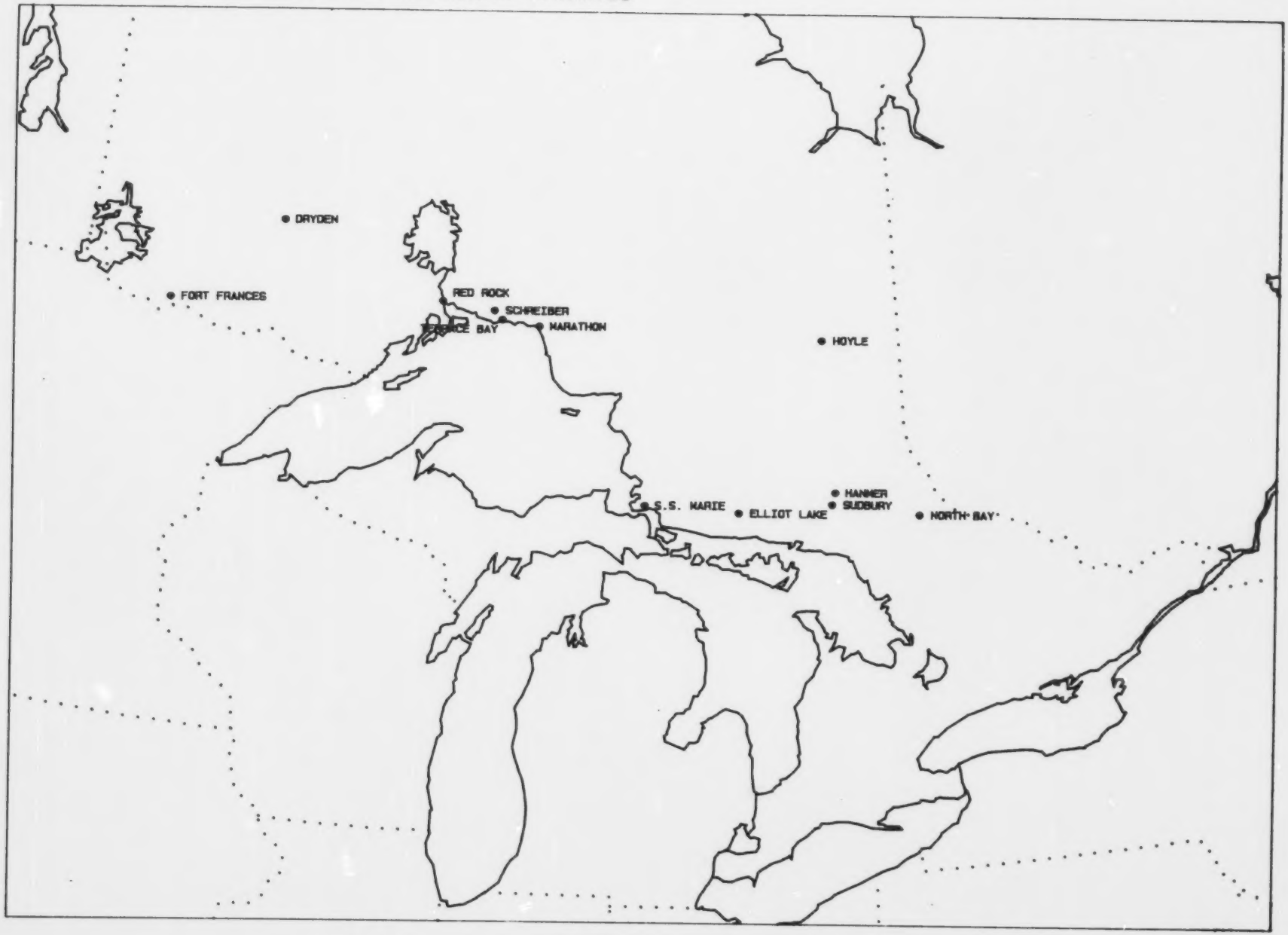
MAP 4 LOCATIONS OF DAILY MONITORING - S. ONTARIO



MAP 5 LOCATIONS OF DAILY MONITORING - N. ONTARIO



MAP 6 LOCATIONS OF METEOROLOGICAL MONITORING - S. ONTARIO



MAP 7 LOCATIONS OF METEOROLOGICAL MONITORING - N. ONTARIO